7th Annual SEAAIR Conference Proceedings

Preface by Editors

The production of the 7th Annual SEAAIR Conference Proceedings involved the cooperation of a lot of diverse parties ranging from the authors, the editors, the production and graphic design staffs, all of whom had worked conscientiously and arduously towards the final outcome of a quality proceeding. The process emphasized the quality rather than the quantity in terms of the papers in tune with the conference theme of "Sufficiency and Sustainability in Higher Education – An Agenda".

The diversity of the papers made it difficult to categorize the papers into the 5 sub-themes as most of the papers have common characteristics over laying the sub-themes that made it a challenge to arrange them as per the themes. The majority falls into the teaching and learning mechanisms theme, followed by institutional research and higher education management practices themes totaling 43 of the 52 full peer-reviewed and accepted papers included in the proceeding. The full papers were selected on their basis of the quality of their contribution to and advancing of knowledge in its theme, from an original 99 abstracts received. About 10 papers were withdrawn from the conference due to budget and time constraints. A few papers were allowed to be presented without the full paper being included in the proceeding due to their not meeting the dateline and on the recommendation of the reviewers.

The diversity of the papers were also reflected in the papers coming not only from the South East Asian countries, but also from Bahrain, Oman, Lebanon, UK, US, New Zealand and Australia that laid the beginnings of the strive by the SEAAIR executive committee to expand the networking of the IR community.

For this 7th SEAAIR Conference Proceedings, we have to acknowledge that mistakes and overlooked issues do occur even though we tried our best to minimize them. Any overlooked issues or mistakes are the sole responsibility of the editorial group, but regardless of which we hope that everyone will enjoy this publication.

We wish everyone a fruitful time in Bangkok, Thailand, not only from the academic aspect through the discussions and the presentation of the academic works but also from the social side with the cultural and networking events organized to make this conference a success.

Best regards,

Dr. Patricia Arttachariya
Asst. Prof. Dr. Teay Shawyun
Editors, SEAAIR 2007 Conference Proceedings

CONFERENCE PROGRAM

7ᴛʜ ANNUAL SEAAIR CONFERENCE

ON

SUFFICIENCY and SUSTAINABILITY IN HIGHER EDUCATION - AN AGENDA

Assumption University of Thailand
5-7 September 2007
Bangkok, Thailand

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SUB-THEME:

I. INSTITUTIONAL RESEARCH

USING PERFORMANCE INDICATORS TO ASSESS INSTITUTIONAL EFFECTIVENESS IN HIGHER EDUCATION – A CASE STUDY

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ABSTRACT

San José State University (SJSU) is an institution that strives to achieve a "culture of teaching and student learning", whereby, institutional data relating to how effectively the University is achieving its strategic goals of Vision 2010 becomes the basis for decision making and the impetus for improvement. The institution is developing performance indicators (PIs) as a means of demonstrating that the institution is using the resources wisely, whereas faculty and campus administrators are most supportive of learning outcome assessment and other data collection that will support the improvement of teaching and student learning, student success, and administrative process. Thus, strategies and initiatives could be given higher priority only if they are judged to make more substantial contributions to achieving the targets established for institutional level PIs.

In this study, we describe in detail about the development of PIs and a balanced scorecard system to support internal planning, and accountability and to continue improvement initiatives. Our goals are fourfold: 1) to examine the movement of PIs in the United States; 2) to provide a framework for defining and better understanding PIs and to identify a methodology for linking strategic decision making with these indicators; 3) to illustrate how internet based balanced scorecard system could dynamically monitor PIs and assess institutional performance; and 4) to describe the institutional research's role during the implementation process.

As colleges and universities in various South East Asian counties confront the need to realign themselves to dramatically changing environments and stakeholder expectations, they will come to appreciate the utility of PIs as a driver of decision-making and an essential element of transformation. Institutional researchers can play an important role in the development of PIs. By working closely with senior administrators, faculty and program managers, and by applying expertise in the areas of measurement and data analysis, the institutional research (IR) practitioner can serve as information broker in the development process. It is our hope that this study provides a context for understanding how best to deploy a PI development process, balanced scorecard systems, an example of methodologies and specific indicators to prepare readers to contribute to any such developmental effort within their own institution.

INTRODUCTION

Throughout the developed world, and especially in the United States, institutions of higher education have invested significant resources in demonstrating their effectiveness. Monthly meetings of boards of trustees, institution-wide strategic planning efforts, state-mandated student learning outcomes assessment initiatives, institutional self-study for re-accreditation, and

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academic program review are but a few of the types of performance appraisal to which institutions are subject. Yet despite all the efforts to comply with accountability demands, there is a widespread impression that, on the whole, higher education institutions have not yet succeeded in conveying their value and effectiveness to an increasingly skeptical public.

In this study, we describe in detail about the development of PIs and balanced scorecard system to support internal planning, accountability and continue improvement initiatives. Our goals are fourfold: 1) to examine the movement of PIs in the United States; 2) to provide a framework for defining and better understanding PIs and to identify a methodology for linking strategic decision making with these indicators; 3) to illustrate how internet based balanced scorecard system could dynamically monitor PIs and assess the institutional performance; and 4) to describe the institutional research's role during the implementation process.

PERFORMANCE INDICATORS AND QUALITY ASSESSMENT IN THE UNITED STATES HIGHER EDUCATION

Performance measure of post-secondary education has long histories in the United States. In 1910, reputational rankings and institutional comparison have long been the most common method for public assessment of quality. Jordan (1989) suggested that they have been influential but that the enormous range of criteria and uses contributes more to a mystique of gauging higher education program performance than to its serious appraisal.

The development of assessment practices has taken many different shapes and forms (Ewell, 1983; Benta, 1988, Benta and others, 1993). Since 1985, most colleges and universities have been required by state mandate and regional accreditation requirements to put assessment programs in place. Increasingly, assessment is being recognized for its inherent value. Whereas the resource allocation and reputational aspects of higher education have remained primarily administrative issues, outcome assessment prentices have penetrated more deeply into the faculty realm of academic programming and instruction. Assessments of student achievement in their majors and in general education have drawn faculty directly into program review process.

In addition, strategic planning influenced the professionalization of the business side of higher education management that provides an up-front, information-based approach to institutional development. George Keller's (1983) seminal work described some of the early efforts to bring a strategic business planner's orientation to the development of higher education institutions. The method requires one to first state the purpose and goals of a college or university. Institutional leaders must then consider the feasibility of pursuing those goals within the current and future social and political environments, and make strategic choices about hot to proceeds.

Although it has proven successful in a variety of settings, the strategic planning approach has been limited by two important features of higher education. First, many colleges and universities have had limited success with defining shared purpose. This is especially true at large public universities that have diverse stakeholders, complex organizational arrangements, and multiple purposes. Second, strategic planning has often been adopted as a top-down management approach, in conflict with the collegial faculty governance model of many colleges and universities. The inability of institutions to articulate their goals and purposes in simple and understandable terms has made it difficult for them to provide compelling evidence of institutional effectiveness. This has given rise to governmental attempts to impose external criteria for performance appraisal.

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As mentioned earlier, the growth and diversification of student outcomes assessment proceeds in the United States, as does the continued development of resource allocation and management methods and the further elaboration of reputational rankings and peer comparisons. Unfortunately, these efforts are continuing along separate, often uncoordinated paths. In the mid-1990s, process-oriented evaluation methods, such as total quality management (TQM), had joined the wide array of methods that characterize higher education performance appraisal in the United State.

Despite problems with language and other aspects of these TQM methods, there are indications that process improvement methods can be successfully applied both to the administrative and the academic operations of higher education. In the late 1990s, the California State Universities (CSU) System launched a major effort to bring continuous improvement methods simultaneously to multiple campuses across a major university system. This initiative allowed CSU campuses to develop outcomes assessment, performance measures, and balanced scorecards for administrative processes that facilitate comparison of performance between campuses and the sharing of effective practices. For more information about the CSU Quality Improvement Program, visit www.calstate.edu/QI.

Over the past few years, accountability issues have surfaced in higher education, as much as they did in the 1980s. In September 2006, Secretary of Education Margaret Spellings proposed an Action Plan that includes creating a federal student database, providing funds to institutions that use and report the results of standardized tests, and challenging accrediting groups to require reporting of student learning outcomes (Gallagher , 2007). In general, it refers to colleges and universities being held responsible for using their resources in an efficient and effective manner in order to produce the best education possible at the most reasonable cost. Many institutions of post-secondary education were in a difficult situation when they were asked to explain what they did with the money they were given during the prior year. All they know was they needed more of it the following year. Such perceived responses are difficult to understand for the business professionals. They tend to be accustomed to "bottom line" or profit-making environments and have difficulty understanding the lack of accountability measures in colleges and universities. The tendency, therefore, is to require that some be developed.

In higher education, the type of accountability referred is less legalistic and financial, as accountants might be concerned with, and is, instead, more performance oriented. In institutional research, the focus tends to be more on performance auditing than on financial auditing. Instead of the asking how well the money was spent, the institutional research should addresses whether or not it was spent properly, within legal and other acceptable financial bounds (Sorensen, Furst-Bowe, Moen, 2007).

It is logical to question why so much attention has been focused on the performance aspects of accountability in recent years. Several answers to that question have been suggested, and probably all of the proposed answers have had some influence. One suggestion relates to the large percentage of students now going to college. When more than half of all high school graduates are attending college, there is less mystique regarding it. Another related fact has to do with the sheer amount of resources now devoted to higher education.

DEFINING PERFORMANCE INDICATORS

Performance indicators have emerged largely in response to various pressures that post-secondary education is facing today. With a simple and compelling idea, PIs measure how well something is being done. PIs can be described as a financial and non-financial metric used to quantify goals or objectives to reflect strategic performance of the institution. They are used to assess the present state of the business and to prescribe a course of action. Monitoring PIs in real-time is known as business activity monitoring and is typically tied to the institutional strategic goals (as exemplified through techniques such as the Balanced Scorecard that will be explained later in more detail).

Based on the literature review, the term performance indicators can be described in many shades of meaning. Several authors have described PIs by differentiating them from other types of measures. Dochy, Segers, and Wijnen (1990) contact PIs to descriptive statistics and management information. Descriptive statistics such as student enrollment headcount are measures that have no inherent significance. They lack both worth (knowing whether higher values are better or worse than lower values) and context (knowing how the value compares to those of previous times, other groups, or other statistics). Management information includes quantitative or qualitative data that are related to each other, as in trend reports on revenues and expenditures or course seat demand in relation to curriculum changes. Management information adds the dimension of context, showing difference in values either over time, across different subgroups, or in relation to other descriptive statistics. Like descriptive statistics, management information lacks worth.

PIs refer to empirical data that describes the functions of an institution and the ways the institution pursues its goals (Dochy, Segers, and Wijnen, 1990). They are related to both time and context and are rooted in a goal-driven process. Thus, performance indicators have the added dimension of worth. That is, a measure or statistic becomes a performance indicator when it is explicitly associated with a goal or objective. It should be clear with PIs which direction one would like to see the value go up, down, or remaining the same as to indicate the desired level of performance.

The PIs differ depending on the nature of the institution and the institutional strategic goals. They measure progress towards their institutional strategic goals. They should not be confused with a Critical Success Factor (CSF). A critical success factor is a factor that needs to be in place to achieve that objective; for example, a product launch. According to Cuenin (1986) PIs can be described in comparison to simple indicators and general indicators. Simple indicators (e.g., total headcount enrollment or general expenditures) refer to a neutral description of a situation or process. PIs require a point of reference and are relative, not absolute (e.g., actual headcount enrollment as a percent of the enrollment target and general expenditures per full-time equivalent – student (FTEs). General indicators include opinions, survey findings, general statistics (e.g., reputational rankings or overall 6-year graduation rates) that are not related to specific processes or goals. Thus, the same measure may serve as a performance indicator as well as some other types of indicator or statistic. For example, the student/faculty ratio (SFR) is a performance indicator if the institution is explicitly attempting to increase or decrease the proportion of graduate instruction. It is management information if presented as a time-series trend or normative comparison. If presented as an isolated measure, this measure is a descriptive statistic.

It is noted that in reality institutions often, when looking for Performance Indicators, discover that they cannot get the indicators that they would like to have. In many cases, they are stuck with various non-key indicators. These are used as if they were PI's because it is all they have.

Whenever an institution establishes a structured approach to defining and obtaining performance measures, it runs the risk of leading the entire institution in a certain direction. Once institution is hitched to the measurement indicators, it may be difficult to decouple, even when concerns arise about unexpected consequences of the measurement system.

Deciding What to Measure: Many colleges and universities have taken counterproductive approaches in their early efforts to develop performance measures. The most frequent problem is that they attempt to measure too much, which leads to wasting time, resources, and energy. An important rule of establishing PIs is to study a process, looking for the vital few factors, and then to establish measures of these vital few factors and to use the data to develop and assess improvement.

Many universities measure their freshman retention rate as a primary process and outcome measure, for example. In examining data related to freshman performance, there are many possible factors that can account for freshman success, such as academic preparation in high school, financial constraints, and excessive use of alcohol or drugs. The relative importance of each of these indicators might differ greatly from one campus to the next. Each institution needs to decide on its own vital few measures that are most important for tracking institutional performance and progress on key initiatives.

Because PIs can cover a wide range of levels and functions, several authors have attempted to describe their most beneficial applications. It is clear that the use to which they are put describes their composition and method of calculation. According to Jowett and Rothwell (1988), they observe that even the definition of performance indicators is largely dependent on the perspective taken, such those from as regional accreditation, senior administrators, or program coordinators. Thus, the tools or indicators for performance measurement must vary accordingly.

LEARNING BY EXAMPLE: SAN JOSÉ STATE UNIVERSITY

A. Framework for Defining Performance Indicators derived from a Strategic Planning Process

San José State University (SJSU) strives to achieve a "culture of teaching and student learning", whereby, institutional data relating to how effectively the University is achieving its strategic goals of Vision 2010 becomes the basis for decision making and the impetus for improvement. The institution is developing PIs as a means of demonstrating that institution is using the resources wisely, whereas faculty and campus administrators are most supportive of learning outcome assessment and other data collection that will support the improvement of teaching and student learning, student success, and administrative process. PIs are specific quantitative measures that tell stakeholders, managers, and other staff whether the institution is accomplishing its goals using an acceptable level of resources.

At SJSU, strategic decisions take place at almost all levels and align the institution with its changing environment. To influence action at all level, SJSU had faced various challenges. One challenge was to ensure students, faculty, staff and administrators recognize when they are

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making a strategic decision so that they can align their decision with agreed-upon institutional strategic goals. SJSU also ensured that they strategy is the one that has the highest probability of positioning the institution for success. Finally, SJSU had tried to furnish decision makers with information that reveals whether the strategy is working, and if it is not, provides insight into the nature of the problem and its potential solution. Thus, decision makers across the institution can utilize the performance indicators to help meet these challenges.

As mentioned above, PIs are measures that are examined to determine the health, effectiveness, and efficiency of the institution. When strategic decisions are linked with PIs, they can be especially effective in aligning the institution within its environment, prioritizing resource allocations and program initiatives, focusing attention, and setting a course of action for the institution as a whole. In other words, PIs could guide the institution, ensuring that it becomes more effective and more competitive.

B. Aligning Resource Allocation to Performance Indicators

Although the efforts to link performance measures and budgets have existed in the post-secondary education for many years, they have been significantly hampered by poor performance design. The Balanced Scorecard at SJSU has demonstrated the capability to overcome many of the shortcomings associated with typical performance measurement efforts and offers a powerful platform for the linkages of strategic plans, performance measures and budgets. Using the Balance Scorecard to drive the resources allocation process is accomplished through a five-step process, described in Figure 1.

The SJSU mission, Vision 2010 goals and institutional level strategic plan are the starting point in our discussion. The building blocks are translated into the quantifiable institutional level performance indicators, which is then used as the key reference point for the Balanced Scorecard System across the university. All performance indicators should contain not only goals, measures, and thresholds, but also associated initiatives. These programs, projects and plans describe how the divisions or departments will achieve the performance targets. It is important that the initiatives forge the bond between performance indicators and budgets. Quantifying the initiatives will form the basis for operating and capital budget requests.

Figure 1: Aligning the Performance Measures to Budgeting
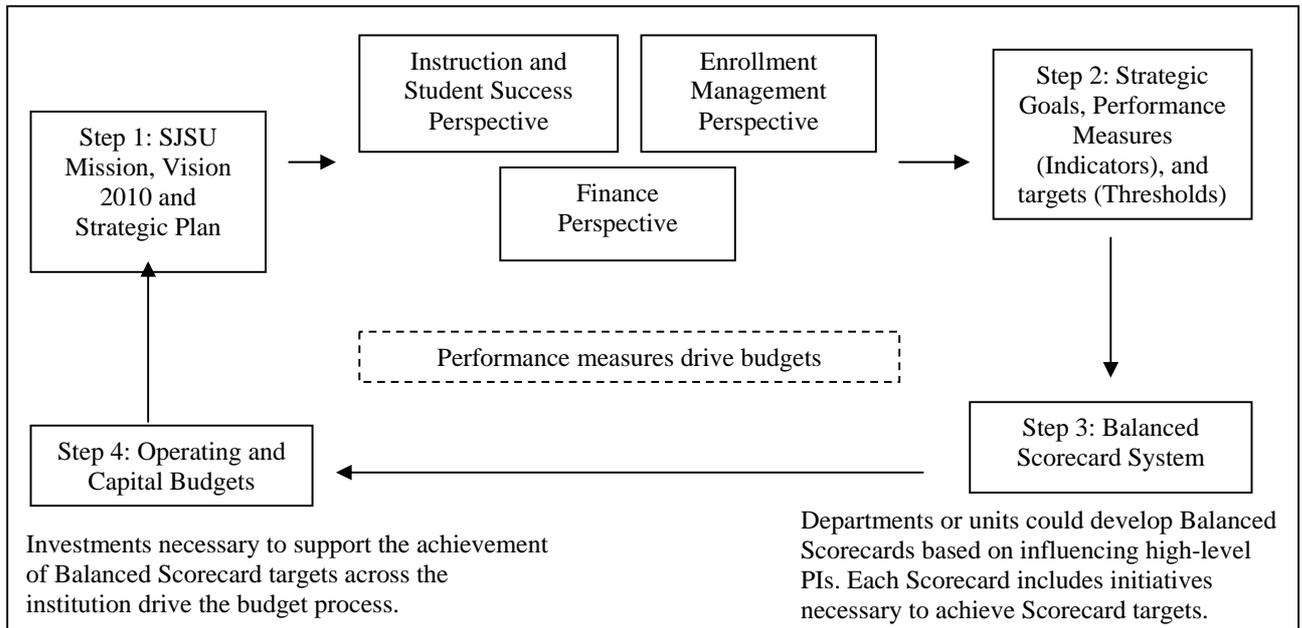
Step 1: Develop a plan

This step focuses on the communication plan about the implementation of performance indicators across the university. The communication should focus on why the change is being made, how it will benefit the institution, recognizing the "What's In It For Me" principle, and how it will make life easier for budget planners.

The purpose of the assessment plan is to evaluate the influence that organizational form, function, resources, strategic goals have on achieving the PIs. Various units or departments tend to use this plan to make the case for more resources. This tendency should be avoided during this stage. The analysis should be taken as an opportunity to describe the current state of the institution as a baseline for change.

Step 2: Develop or refine the performance measures

The method of performance indicator and budget linkage relies exclusively on the development of Balanced Scorecard System. Thus, the institutional level performance indicators, the strategic goals, measures, and targets must be in place. Prior to the development of performance indicators, the University Planning Council (UPC) was assigned to gather, rank and cull these indicators. At first, the UPC refused to get specific in developing these indicators. They instead formulated broad general categories, such as enrollment management, instruction and student success, finance, integrative learning, and inclusive excellence. These categories can be used to help the Council construct more specific PIs within each general category. Table 1 displays samples of performance indicators to support SJSU Vision 2010.

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Step 3: Develop Internet Based Balanced Scorecard System

At SJSU, Balanced Scorecard System (BSS) was introduced to measure institutional performance across three balanced perspectives: Instruction & Student Success, Enrollment Management, and Finance. The idea behind this application is that financial performance does not adequately capture all the factors affecting the culture of learning and student success (e.g., retention, graduation and engagement).

Table 1: Sample of Performance Indicators for SJSU Vision 2010

Instruction & Student Success (Perspective 1)	Enrollment Management (Perspective 2)	Finance (Perspective 3)
• Student/faculty ratio measured for full- and part-time faculty • Percentage of lower division courses taught by full-time faculty • Average high school GPA of incoming freshmen • Percentages of entering freshmen who remediated within 1 year • Percentage of first-year and senior undergraduates engage in high levels of learning and development (student engagement)	• Cost of recruiting a new student • Fall-to-fall retention rates for different subcategories of students • Average course unit load per student • Percentage of inquiries who apply • Percentage of applicants who are admitted • Percentage of admitted students who enroll • Graduation rates measure for 4, 5, and 6 year intervals – first-time freshmen and undergraduate transfers	• Instructional cost per FTE student • Instructional cost or state-supported courses • Annual or per credit hour tuition rate • Room and board charges • Annual fund giving • Annual voluntary support

BSS is an internet based system, developed using the Cognos Business Intelligent (BI) and performance management application that combines various features, including ReportNet, PowerPlay, Metrics Manager, Noticecast, and Data Manager (formerly DecisionStream). BSS does not only display the relationships in an easy-to-understand and aesthetically appealing way, but also promote the PI's acceptance. Once users feel comfortable with the system, decision support and management decisions can be greatly enhanced as a result of the advanced analytics offered in the system. Cause-and-effect relationships can be probed, what-if analyses can be conducted, and questions can be raised, all of which lead to increased learning. Figure 2 shows a screenshot of Enrollment Management Scorecards.

SJSU recognized that the communication, information sharing, and institutional learning can all be enhanced using this automated Balanced Scorecard System. Documents linked to BSS have led interested users to mission statements, Vision 2010 strategic planning, strategic goals and any number of places that could stimulate ideas on improving performance and student learning. Commentaries provided as explanations for measure performance have often led to the spontaneous formation of discussion groups and taskforces throughout the institution. Technology had also allowed users to join a wider fraternity of colleagues embracing Scorecard software.

Figure 2: Sample of Internet Based Performance Balanced Scorecard System
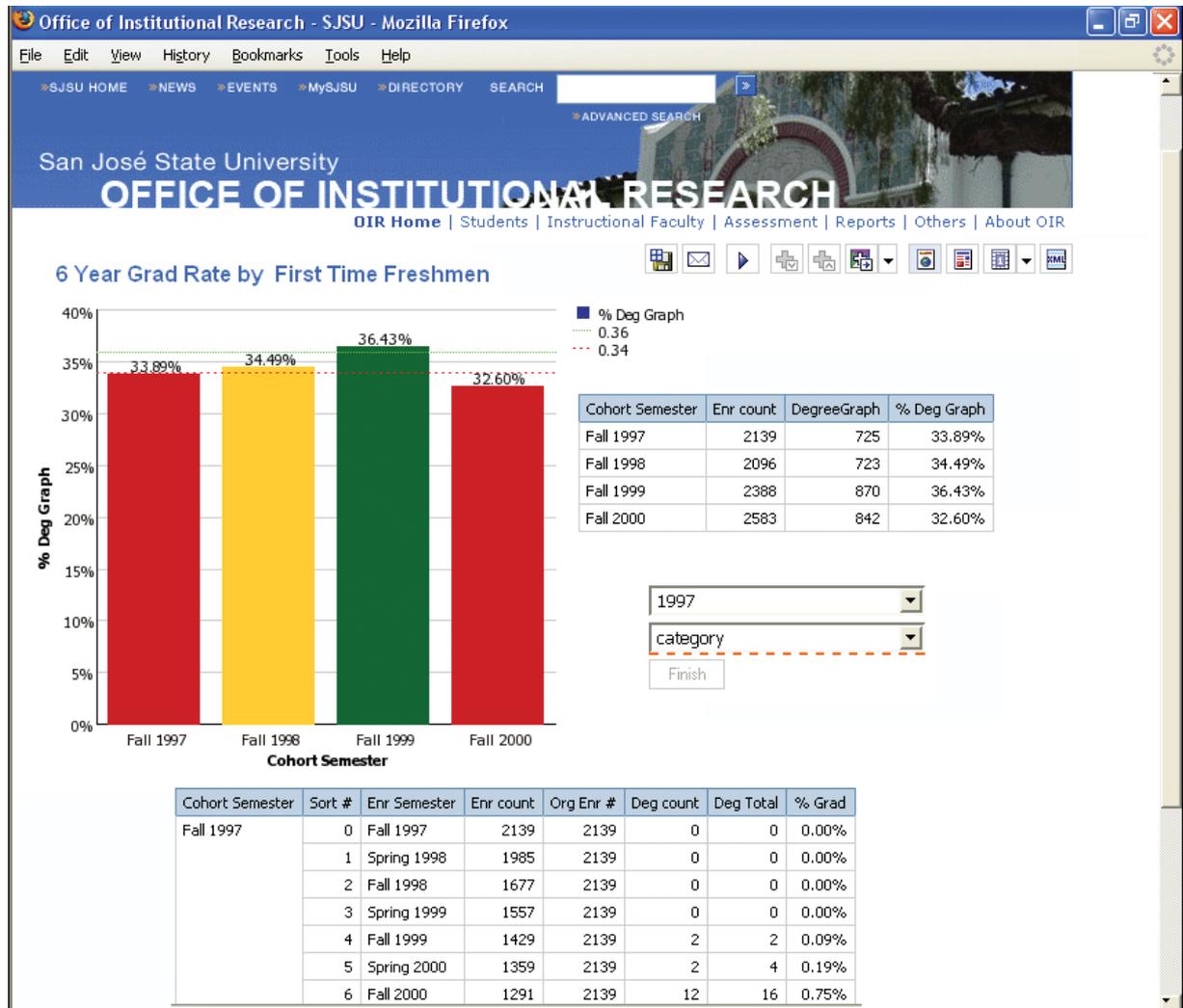
The primary drawback of BSS implementation is the cost associated with the underline Cognos Business Intelligent, training fees, annual maintenance agreements, and consulting assistance. However, the cost can often be justified based on the elimination of manual tasks. Any institutions that are interested in the in-house implementation of Balanced Scorecard System, performing a feasibility analysis could help them determine whether application and related expenses make sense.

In addition to the cost, a potential danger in using technology is the temptation for institutions to introduce the automated system at the same time as the performance indicator, and in effect introduce it as the performance indicator. Technology should be an enabler of the PIs. At SJSU, it had often helped the institution derive the maximum benefits from the performance measures, but it does not act as a substitute for the challenging work of selecting objectives and measures that depict strategic planning.

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Step 4: Compile Spending Requests and Finalize the Annual Operating and Capital Budget
The initial task in this step is to provide program center managers across the institution with templates to easily capture resource requirements relating to Scorecard initiatives. Table 2 displays a condensed version of such a template. Here, the Enrollment and Academic Services (EAS) has proposed three initiatives that program center managers feel are crucial in helping them achieve a 47% graduation rate (target) of the first-time freshman cohort by the year of 2010. Because this is just one measure, (Goal 2.3) one would require documents such as this for all measures across the institution. Each initiative must be accompanied by supporting documentation as well (such as costs, timing, dependencies, and milestones).

Table 2: A Simplified Budget Submission Form

Measure	Target	Initiatives	Resource Requirements	
			Operating	Capital
Goal 2.3: Improvement in recruitment and retention rates of first-time freshmen	Increase 6-year graduation rate of first-time freshmen by five percentage (47% by 2010)	1. Develop the electronic communication hub to improve timeliness and frequency of communications with students regarding admission and enrollment	$15,000	$50,000
		2. Establish the baseline training and workshops that includes the use of peer mentors/advisors	$25,000	$15,000
	Note: 6-year Graduation Rate = 42% in 2005	3. Develop recruitment material to support the targeted recruitment of high school graduates from service area and beyond	$45,000	$85,000

Adapted from Balanced Scorecard Step-by-step: Maximizing Performance and Maintaining Results (Niven, 2002).

After budget submissions gathered from all participating groups are compiled on templates. The "roll-up" of spending requests is often displayed in relation to strategic goals and performance indicators (PIs). Table 3 provides an example of budget requests by Enrollment Management (EM) Panel that summarized the roll-up in relation to their corresponding measure (goal).

The column labeled "Current Scorecard Status" provides readers with a snapshot of performance on the strategic goal in the most recent year. The evaluation uses a traffic-light metaphor: green is synonymous with meeting or achieving the target, red indicates performance requiring improvement, and yellow represents a situation requiring caution and attention. Thus, it is easy to discern that Goal 2.2 is performing below expectations, Goal 2.1 is above expectations, and Goal 2.3 requires more attention.

The last two columns of Table 3 describe the total operating and capital expenditures requested across the institution on these goals. The budget committee that is responsible for approving budget request can use this information to determine where the majority of spending requests are being directed, and take action to ensure appropriate balance in the allocation of resources. As is

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always desirable, this analysis will produce important questions relating to how funds are expended. In this instance, administrators must determine how much they are willing to spend in order to elevate the advising program to an acceptable level. Similarly, while the development of comprehensive enrollment plan to meet CSU target is currently in green, how much necessary to sustain that performance?

Table 3: Budget Requests by Balanced Scorecard Strategy and Vision 2010 Goals

Vision 2010 Theme: Supporting Students in Choosing an Efficient Pathway to the Baccalaureate			
Measure	Current Scorecard Status	Budget Request	
		Operating $000s	Capital $000s
Goal 2.1: Developed and implemented a comprehensive enrollment management plan that sets an annual enrollment growth target in consultation with the CSU (currently set at 2.3% per annum).	Green	$XXM	$XXM
Goal 2.2: Enhanced advising program to increase retention and reduce time to graduation for all students.	Red	$XXM	$XXM
Goal 2.3: Obtained measurable improvement in recruitment and retention rates thereby increasing graduation rates (time to degree) by five percentage points.	Yellow	$XXM	$XXM
Percent of Total Spending		45%	35%

Adapted from Balanced Scorecard Step-by-step: Maximizing Performance and Maintaining Results (Niven, 2002).

The final assignment of this step is to close the gap between the funds requested by groups across institution and the funds the university have available. To accomplish this assignment, each program center manager needs to deliver a formal presentation to the Budget Committee and senior administrators, outlining the budget submissions from his or her group, including: what they encompass, why they are significant, and how they will positively impact Scorecard targets. By clearly demonstrating how initiatives link to Scorecard targets, the information presented will assist senior administrators in making appropriate resource allocation decisions.

After the completion of Step 4, the process becomes iterative in nature, with executives reviewing and questioning the proposals, attempting to determine which are worthy of inclusion in the budget. To ease the decision-making process somewhat, ranking systems should be developed that represent the potential impact of removing a specific initiative from the Balanced Scorecard. Although the rating will be subjective, they will serve as a powerful impetus for conversations on establishing spending priorities. Thus, institutions pursing the link between budgets and PIs have discovered a number of benefits associated with the process, including: the elimination of emotion, placement of facts as the driver of budget discussion, ability to build collaboration, and reinforcement of the institutional strategic plan.

ROLES OF INSTITUTIONAL RESEARCHERS

The institutional researcher's role in the implementation of performance indicators and Balanced Scorecard System is that of facilitator. According to Borden and Delaney (1989), roles of an institutional researcher refers to an information broker who has sufficient knowledge of the administrative issues confronting decision-making groups, an understanding of the decision-making processes among individuals and within groups and organizations, access and analysis of appropriate information in a timely and reliable fashion, and an application of information to the process, so as to inform and improve decision making outcomes.

In many cases, PI development efforts move to available data without sufficient thought about appropriate measures. Institutional researchers can play a critical role to help avoid this leap by advising PI developers of the nuances and vagaries of the data in relation to the concepts being measured and by providing sound guidance based on an understanding of the literature and knowledge gained from previous professional experience. It is important that the choice of PIs must be from a coordinated process from the experience of individuals throughout the ranks of organizational governance and management. At the point of testing and implementation, the institutional researcher's knowledge of institutional information systems, survey research methods, and environmental scanning techniques to furnish the necessary data is essential for deriving valid and reliable indicators of institutional performance.

CONCLUSION

Since performance indicators can cover a wide range of levels and functions, it is clear that the use to which they are put describes their composition and method of calculation. The definition of indicators of performance measurement is also largely dependent on the perspective taken, such as regional accreditation, senior administrators, or program coordinators. However, if PIs are collaboratively constructed throughout an institution, they can be utilized to emphasize and strengthen an institutional improvement efforts by communicating a common institutional mission and goals and to reduce complexity of manageable priorities without losing sight of the breadth of services offered and their outcomes. PIs convey institutional priorities and set standards for performance and accountability.

The implementation of performance indicators could be a highly political issue. They can be described as the generation of judgments about performance that are being developed as part of an attempt to reorient the institution toward more evaluation in general and more public forms of assessment in particular (Cave, Hanney, and Kogan, 1991).

Although there may be no general agreement about what works best, there is some agreement as to where to focus the improvement efforts. It is important that PIs require the explicit statement of strategic goals and objectives. This characteristic could yield the best promise as well as the worst nightmare for an institution. If imposed in a disorganized or haphazard fashion by those who control the purse strings, they can be detrimental to optimizing institutional performance. If used in an organized way, they can provide significant improvements in institutional effectiveness and efficiency. Assessment must begin within the institution's own agenda and goals, before responding to the call by external constituencies (e.g., regional accreditation, state university system) for accountability.

Although efforts to link budget and performance measures have existed for quite sometime, they have been significantly hampered by poor measure design. Sometimes simplicity is the best approach to measure institutional wide performance. We have a tendency in modern organizations to make this appear more complicated then they really are. The Performance Indicators and Balanced Scorecard System at SJSU has demonstrated the capability to overcome many of the shortcoming associated with typical performance measurement efforts, and therefore, offers a powerful platform for the linkage of budgets, performance measures and strategic planning. Only those initiatives that provide a meaningful contribution to the fulfillment of strategic objectives should be undertaken.

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ENHANCING EMPLOYABILITY OF UNDERGRADUATE ALUMNI: A STUDY IN ACCOUNTING UNDERGRADUATE PROGRAM IN INDONESIA

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ABSTRACT

In globalization era, alumni of undergraduate compete to get work in Indonesia or abroad. In this time the alumni of undergraduate program especially those of accounting program are difficult to get job and proper reward matching to their education level. Besides, the waiting time to obtain job is also quite long. It requires a substantial change in accounting undergraduate education system. This research aims to achieve the solution to the problem.

The population and respondents of this descriptive research are accounting managers of company, auditors of public accounting firms, and accounting undergraduate alumni. Questionnaire and intensive interview are used in the survey using one hundred and fifty six respondents. The research finds that enhancing employability of alumni of accounting undergraduate program in Indonesia needs six competencies namely knowledge and understanding skills, intellectual skills, practical skills, managerial and soft skills, competence in communication in English, and information technology awareness.

Keywords: Enhancing employability, accounting undergraduate, knowledge and skills

BACKGROUND

The amount of unemployment in Indonesia has achieved ten million people. The alumni of higher education are among the unemployment. The unemployment of higher education graduates comes from many higher disciplines, including accounting undergraduate.

The tracer study performed by the institution (Sekolah Tinggi Ilmu Ekonomi Perbanas Surabaya – Indonesia) in 2006 showed that the unemployment period of its alumni is more than six months and the salary at their first career was too low. The deep study is needed to review the reason of the problems, including the answer of the inquiry of the users on their requirement for accounting undergraduates. The user of accounting undergraduate is assumed to consist of industry and accounting profession association.

The result of the study is expected to become the institution policy to improve the education process in accounting program. Thus in the next period, the waiting time to get the job is shorten and the first salary of the alumnus improves than before. In other word in next period it is expected that an employability of accounting undergraduate will be enhanced.

LITERATURE REVIEW
The accounting education of undergraduate program

It is difficult for accounting students to connect textbook theory to business practice (Danvers, 2006). It is needed a perception of accounting students about their career in the future especially about the occupation of an accountant and accounting profession itself. The changes of the client requirement, the technology and information revolution, the development of innovative and complex financial instruments as well as the globalization of the economy have placed increased pressures on accounting practices (Byrne and Willis, 2005) and accounting itself. Stivers et al. (2000) explained that accounting undergraduate program in USA universities needed an assessment about communication skills; intellectual skills; interpersonal skills; general knowledge; organizational and business knowledge; and accounting knowledge. But in Indonesia the skills aren't enough. The alumnus of accounting undergraduate requires ability in English and awareness in information technology. By referring to many requirements of skill and ability, the knowledge and skills needed for the alumnus of accounting undergraduate program are knowledge and understanding skills, intellectual skill, practical skill, managerial and soft skills, ability in English, and information technology awareness.

Knowledge and understanding skills
Ainsworth, 1993 explained that knowledge and understanding were important parts in accounting higher education process. Moreland, 2006 indicated that for being a good accountant public, accounting education needed to provide lectures containing the element of knowledge and understanding skills.

Intellectual skills
For an accountant, intellectual skills cover the characteristics of problem solving ability and self reporting (Still K., 2004). Intellectual skills are important in business higher education, especially in accounting (Hansen, 2006).

Practical skills
An accountant occupation is to prepare, analysis, and audit financial statements. Accounting education requires practices that the alumnus being an expert in its discipline. But Wade D et al, 2006 described that the practical skills of the alumnus of accounting undergraduate is really limited. That's why, practical skills are needed in accounting higher education.

Managerial and soft skills
Accounting education graduate is expected to hold a management position. An accountant in all works always interacts with the others, and frequently confronts a time pressure to finish its job. An accountant often meets an ethic dilemma because he/she faces many interests. In complex business, managerial and soft skills are needed (Parente, D et al, 2006). Then, managerial and soft skills are needed to learn in accounting higher education.

Ability in English
Now the world has been in globalization period. There has been a need for business communication among nations. English is a language for communication in the world, because one third people in the world speak in English (Fishman, 1998). An accountant task is to inform financial statement to users, perhaps covers user of many countries. Then, in globalization era, English competency in accounting higher education is more needed.

Information technology awareness
The information technology such as computer, internet, and software become a requirement inevitably. Financial reporting could not be performed manually. The most of financial and trade transactions are performed by and through information technology. An accountant is a skilled labor. Now a skilled labor needs information technology skills (Egger, 2005). Then awareness to information technology is an important program in accounting higher education.

RESEARCH METHOD
Research Design
The study was designed to observe the type of accounting undergraduate competencies required by users. The study was descriptive research, because its objective was to obtain an explanation about the aspects corresponding with the phenomenon observed and to explain the subject character investigated.

Research instrument
The research instrument was composed according to the accounting competencies types organized by American Institute of Certified Public Accountants and adjusted with the research purpose to answer the research objective. The instrument was made involving practitioners and academicians.

The competencies in the study cover six competencies, namely:
1. Knowledge and understanding skills.
2. Intellectual skills
3. Practical skills
4. Managerial and soft skills
5. Ability in English
6. Information technology awareness.

Samples and Respondents
The research samples are firms, accountant public, and the institution alumni. The respondents of the firms are accounting managers or those of having job in finance department. The respondents of he accountant public firms are partners or managers. The alumnus was convenient sampled from the inauguration book. Total respondents are one hundred and fifty six. They are: twenty four firms, forty accounting public firms, and ninety two alumni who have got a job.

Data collecting technique
The data collecting are performed by questionnaire. The questionnaires that meet with the administrative condition and their data were completed, and tested on the validity. The test was performed by conformation the data validity randomly from the questionnaires filled.

Analysis technique
The analysis stages of the study are:
1. Tabulate data that meet to the valid condition of the questionnaires of each group samples.
2. Test the data according to group samples.
3. Descriptively analyse the respondents of each samples.
4. Descriptively analyse according to samples competencies.
5. Perform the purpose of competencies according to the result and objective study.
6. Make the recommendation for curriculum team and institution.
7. Make the research conclusion and record the study limitation.

RESEARCH RESULTS

Sample Description
The sample description is shortly explained in Table 1.

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Table 1
Sample Description

No.	Respondent Description	Firms	Public Accountants	Institution Alumni
1.	Sex:			
	• Male	21	15	68
	• Female	19	7	24
	Total	40	22	92
2.	Education:			
	• High School	2	0	0
	• Three-year study program (D3)	4	2	0
	• Under Graduate	33	16	92
	• Graduate	1	3	0
	• Post Graduate	0	1	0
	Total	40	22	92
3.	Working Experience:			
	< 1 year	2	2	34
	1 – 5 years	17	8	47
	> 5 years	21	12	11
	Total	40	22	92

Summary of undergraduate competencies
The priority competencies of three groups of respondents were:
1. Knowledge and Understanding Skill
   The alumnus should know and understand about:
   1. Accounting for the companies
   2. Financial statements audit procedure and technique
   3. Taxation
   4. Trend of financial accounting standard
   5. Contemporary issues in accounting
   6. Financial risk condition in the industry sector where the accountant works
   7. Economy and business condition in the industry sector where the accountant works
   8. Impact of government policy in the industry sector where the accountant works
2. Intellectual Skills
   The alumnus should have intellectual skills about:
   1. Accounting practices
   2. Items of financial statements
   3. Be carefull in performing the task
   4. Internal audit practices
   5. Company condition in audit preliminary survey
   6. Tax planning
3. Practical Skills
   The alumnus should be able to practice:
   1. Information technology in financial reporting
   2. Business transactions and accounting process in the company

3. Financial Statement referred to financial accounting standard
4. Financial statement for all industries, government, and non profit organization.
5. Taxation in all industries
6. Implementation, control, evaluation, and development of accounting information system
7. Audit working paper
8. Impact of audit opinion for company credibility
9. Function and process of financial reporting for company, government, and non profit organization

4. Managerial and soft skills

The alumnus should have managerial and soft skills, especially about:
1. Self confidence
2. Team work
3. Interpersonal skill
4. Inovation in the job
5. Effective communication by oral or written
6. Making decision and bearing risk
7. Ethical attitude and behavior
8. Obyective, clear, and verified professional financial reporting

5. Ability in English

The alumnus should have ability in English, especially in:
1. Understanding accounting terms in English
2. Oral or written communication in English
3. Financial statement reporting in English

6. Information Technology Awareness

The alumnus should be aware in the information technology, especially in:
1. Accounting soft ware
2. Computer operation systems
3. Internet
4. On line filling up tax application form
5. Management data base
6. Audit soft ware

Discussion

The research result will become an input for the institution to review the curriculum as well as the education process in accounting undergraduate program.

1. Knowledge and understanding skills

   Based on the respondents' answers, users want the alumnus of accounting undergraduate program to have knowledge and understanding skills in company accounting process, financial statement audit, and taxation. It means that the institution should review the content of three lectures so that the alumnus of undergraduate program understands the meaning and practices of three lectures.

2. Intellectual skills

   Based on the respondents' answer it is known that the users want the alumnus of accounting undergraduate program to have intellectual skills especially to solve the accounting problems and internal audit, items of financial statement, company condition in audit preliminary survey, tax planning and being carefully in performing its task. It means that in the accounting practices, internal audit, and financial statement items course the students needed be provided the matter of the problem solving such the institution accounting undergraduate

had intellectual skills in its profession. Being carefully in the job needed been provided in the accounting practices courses.

3. Practical skills

The users expected that the alumnus of accounting undergraduate had practical skills, especially in the process of accounting transaction compilation until financial reporting by the information technology. The users needed that the alumnus of accounting undergraduate understanded the practices of tax reporting. The users expactation needed the institution attention to review the process of the practices courses such the alumnus of accounting undergradute had the practice competencies.

4. Managerial and soft skills

Now the process of teaching in accounting undergraduate program hadn't paid attention the managerial and soft skill aspects. The users opinion that the alumnus of accounting undergraduate had managerial and soft skills should be noticed by the institution to provide them, especially to improve the self confidence, the team work, the interpersonal skills, the inovation in the job, the effective communication by oral or written, making decision and bearing risk, ethical attitude and behavior, and obyective, clear, and verified professional financial reporting.

5. Ability in English

Now the institution hasn't obligated the students to accomplish the certain score in English yet. But because of the importance in accounting practices and the globalization era, English is inveitability the communication requirement. The users of accounting undergraduate wanted that the alumnus had ability in English, especially in the accounting terms, the oral or written communication practices in English, and financial statement reporting in English. The institution should provide an attention to the users requirement that the students get the certain score in English before passing accounting undergraduate program.

6. Information Technology Awareness

Now and in the future, communication using information technology is very important. The accounting information really needed the information technology too. Because of that, the users opinion that the alumnus of accounting undergraduate program should be aware of the information technology was proper. Although the institution has provided the course of information technology, but the quality and the content of the course should be reviewed, especially the awareness about computer soft ware, internet operation, on line filling up tax application form, management data base, and audit soft ware. In the future the alumnus of accounting undergraduate program could work by expertise in accordance with the user desire.

From the research result disscusion, the institution needs to review, to developt and to improve the accounting education process in undergraduate progam. The development and the improvement are in knowledge and understanding skills, intellectual skills, practical skills, managerial and soft skills, ability in English, and information technology awareness. If the skills and the ability of the alumnus of accounting undergraduate develop and improve, the rate of the enhancing employability of the alumnus of accounting undergraduate program will increase quickly and the alumnus salary will become higher then before.

CONCLUSION

The study answers the problem of the cause of the low employability and salary of the institution alumnus of accounting undergraduate program in the first works. The study found the the isntitution should review to develop and improve education process in accounting undergraduate program. The development and the improvement were especially in the courses with reference to knowledge and understanding skills, intellectual skills, practical skills, managerial and soft skills,

ability in English, and information technology awareness. If the skills and the ability of the alumnus of accounting undergraduate develop and improve, the rate of the enhancing employability of the alumnus of accounting undergraduate program will increase quickly and the alumnus salary will be higher.

Study limitation

The study has a limitation that was in the companies sample the respondent not directly related to accounting aspect. Beside it, when the interview was performed the respondent was very busy to prepare the financial statement.

Study suggestion

According to the study weakness and limitation, the study is suggested to:

1. Improve the respondent selection that could represent the population research. Select the accurate time to interview the respondent such could be obtained the optimal research interview.
2. The study to investigate the competencies not only was performed for accounting undergraduate program, but was performed in all institution undergraduate programs.
3. In the future the questionnaire delivery could be send by internet, especially for the alumni. Then the alumni respondent will increase.

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PERCEPTION ON NURSING PROFESSION AND COURSE AND ACADEMIC PERFORMANCE

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ABSTRACT

Majority of school leavers have negative perception towards nursing. They view nursing as low class job, doctor's handmaiden and low pay. They also negatively perceive nursing course as less theories input and merely emphasized on practical. Student's perception could affect their academic performance in nursing. The aim of this study is to examine the relationship of perception nursing profession and course and academic performance. A longitudinal study was carried out on the cohort of 185 first year pre registration Diploma Nursing Students. The sample was collected by mean of universal sampling. The qualitative data were collected based on interview using a semi-structured questionnaire on the second day of orientation. The finding on the perception was then correlated to the result of semester one final examination. Data collected were analyzed using descriptive statistic with SPSS package. The data was presented in table and the relation ship was tested using Pearson correlation. Majority of the student had negative perception on nursing, thus they view nursing as supportive staff that used to assist medical officer most of the time and attended to patient basic need. There was significant relation between student nurses perception and academic performance with p value < 0.05. The result indicated that it is important for young people to have positive though about nursing profession and course as it has positive impact towards the nursing education and produce quality nurse for the community.

INTRODUCTION

The perception of public regardless of age has not been change over the years. Most them had negative perception of nursing as being women's work, doctor's handmaiden, low academic status, limited career opportunities, poor pay, no recognition from society and nursing does not required much thinking and scientific knowledge to support the vacation.

The negative perception had created negative impact on the recruitment of new member to nursing and increase attrition rate of student nurses. Many researches have focus on the extent to which these societal perceptions are realities in their workplaces, and the direct experiences that contribute to attrition from both nursing course and job.

However, to date that is no study done to examine the relationship between perception of student and their academic performance. To certain extent students misconception on nursing and course could contribute to the academic performance. Negative perception or false image on nursing leading to anxiety among student. Thus, it is a quest for most educator and researcher to identify the causes that influence the students' performance. The perceptions of course are associated with test anxiety that will affect the students' performance (Sansgiry et al., 2006)

LITERATURE REVIEW

Generally nursing are perceived as caring and nurturing role , requiring physical and emotional strength, extraordinary and almost patient like an angel, good humour and compassionate and they seem to have beyond normal endurance(Mackay and Elliott, 2002).

Most the youngster in developed countries has wider range of job opportunity, they have better choice of job that they tend to reject unfavorable job such as nursing (Buchan, 2001). Thus, this had made nursing a last choice for them. Contrarily Callings (1997) and White et al.(1998) had identify in their study that the most important factors that influence career choice for new entrants to nursing are the satisfaction of caring for people, together with a long term desire to nurse and engage in people orientated business. Further, more nursing is not a job for money but it is an honorable job and kind of job that you have to have your heart set on (Alison, 2001).

Media has played an important role in affecting the public perception of nursing more often or not misrepresented the true picture of nursing (Alison, 2001). New entrants to nursing use stereotypical examples and portrayals taken from the media to describe what they are expected to do as nurses (Kiger, 1993). As regards to this, Godfrey (2000) emphasized that TV nursing dramas give students the wrong impression of nursing and thus cause the attrition from nursing course. What worrying us is many young people view UK and US television programmes Casualty and ER were 'fairy or not very accurate' representations of nursing.

Nursing is often been perceive as feminine work, primarily an emotional phenomenon and less objective than the scientific, curative work of male dominant of medicine (Howard, 2001). Society always view nursing is female or at least feminine , this has cause among school boys to perceive that taking up nursing as a career could be seen by others as inability in sex role identification and resulting in being ridiculed as being 'a girl' or 'guy' (Hemsley et al., 1999)
Misinterpretation of media on nursing has create stereotyping image of nurses as sex objects, obedient helper to medical doctor, subservient handmaiden, has little academic knowledge (Hovard, 2001). These have further contributed to pervasive perception that the nurse's role is supportive, passive and subordinate to that medical doctor. (Foskett et al., 1998). Nurses are perceived as worker with no autonomous in practice and they do not require decision making in caring of patient. They only carry out doctors ordered or instruction and they are not accountable on their practices (Benner at al., 1999).

Many studies has supported that most of the young people perceive that the requirement to enter nursing course are low, and it would be the last choice of academic pursue. It always views by them as profession requiring less academic qualification than other professions. (Day et al., 1995; Gaze, 1991: Richardson, 1996). Moreover, they considered a qualify nurses would have less chance to do their work with little thinking (Harvey et al., 1997).

In term of career pathway, literature suggests that, as a career, nursing has lost its glamour. This is partly due to the increased career option for women especially in private and cooperate sectors. Nursing is perceived as a career without much opportunity for the young nurses to progress. Promotion exercise is limited to few senior nurses, it seem to be very difficult to reach the top. Opportunity for continuous education was also limited, as it was perceive that nurses do not required higher education because the nature of work does not required scientific knowledge (Hemsley et al., 1999).

STUDY AIM AND OBJECTIVE

Aim
The purpose of this study was to determine the new nursing students' perception on nursing and nursing course and correlation with their performance.

Objectives:
1. to determine why student choose nursing as career.
2. to assess student nurses' perception on nursing and nursing course.
3. to correlate the student nurses' perception and performance.

METHODOLOGY
Study design
The study design is longitudinal cross- sectional descriptive study using quantitative approach so that to allow and help the researcher in describing and examining the interaction among variables. According to Nieswiadomy (1998), in a cross sectional survey design subjects are studied at one point in time and incurring minimal cost. It is usually best to carry out a survey on the respondents' perception. Longitudinal study was use to obtain students' semester one final examination result six months after the data collection from students. Questionnaire was used to obtain the quantitative data.

Study Setting
The study was conducted at the College of Nursing University of Malaya Medical Centre. It is situated in Kuala Lumpur, Malaysia. The college is one of the oldest nursing colleges in Malaysia. The population of student is approximately six hundred. There are three levels of students in the Diploma Programme: year one, year two and final year.

Population and Sampling
The target population was year one-student nurses who had registered in July 2006. The whole population consists of 185 students. Universal sampling was used in ordered to cover the whole population.

Data collection
Data was collected using self-explanatory questionnaire. Data was collected at 2nd day of orientation before briefing of the course was given to students as to minimized biases.
Questionnaire was given to students in the lecture hall. The objectives of the study were explained to students. They were given fifteen minute to answer the questionnaire. The result of students' final examination was obtained from the Program head six months later.

Instrutment
The self- reporting questionnaire which was consists of 33 items were used in this study. It is divided in to two parts. Part A: the factors that motivate student to choose nursing as career (9 items). Part B: student's perception on nursing and nursing course (24 items). Students were required to select three most important factors for part A. As for part B, 5-point Likert scale was used to indicate relative agreement for each item. Response choice range from one (strongly disagree) to five (strongly agree).

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Validity & reliability

Content validity and reliability of questionnaire was determined after consulting the three experts. Pilot study was carrying out to confirm the reliability of tools. A Cronbach's Alpha Coefficient of .674 was obtained illustrated an acceptable degree internal reliability related to the key variable of researches use in practice. Ethical consideration, approval from ethic committee was not necessary as it did not involve patient and no invasive procedure was use to collect data from respondents. Written consent was given by respondents.

DATA ANALYSIS

Data was analyzed using the SPSS statistical package version 12. Frequency, percentage, mean and table were used to describe the data. The relationship between perceptions of students was tested using Pearson correlation.

Finding and discussion

The total respondents in this study are 185 of level one-student nurses. The responded rated was 100 percent. There are ten male and 175 female students. Table one show the frequency of the respondent as regards to the factors that influence the choice of taking up nursing. Table two shows the mean of perception on nursing and nursing course.

Table 1: Factors influence the decision of taking up nursing (n=185)

	Factors	Frequency	Percentage
a	Fulfilling parent's wish	30	16.2
b	Peer influent	5	2.7
C	Experience in caring of the sick	34	18.3
d	Last choice	6	3.2
e	Interested since childhood	41	22.1
f	Desired to help the disable	48	25.9
g	Opportunity to pursue education	28	15.1
h	Job security	109	58.9
i	Opportunity to live and work with people about the same age	79	42.7

Table 2: Mean Perception on nursing and nursing course (n=185)

Nature of nursing	Mean	Characteristic of nurses	Mean	Nursing Course	Mean
Helping patient to meet their basic need	4.79	Physical &emotional strength	3.8	More practical than theories	4.2
Women 'work'	4.7	Patience	4	The course is easy to score	4.15
Hand maiden to doctor	4.9	Good humour	3.2	Less examination	4.2
Caring vacation	4.6	Compassion	4	Not many assignment	4.2
Nursing is profession	3.2	Critical thinker	3	No structured curriculum	3
need tertiary education	3.5	Gentle	4	Spend most of the time with patients	4.2
Low status job	4	Assertive	3.2	Students have plenty of time to do revision	3.5
Low pay	4	feminine	4	Long vacation(holiday)	4.3
Career pathway was not clear	3.5				
Work with autonomy	3.5				

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The finding show in the tables is quite consistent with what has been highlight in the literature. Job security was the most important factor that attracts respondents (109) to nursing. Nurse's shortage has created job opportunity for graduated nurses; nurses will never go out of job. More male are choosing nursing for job security. Opportunity to live and work with people about the same age was the second most important factors.

The perception of respondents on nature of nursing were very much similar to the literature such as nursing is helping patient to meet their basic need, caring vacation and women career, the finding is supported by Kerten (1991) study that majority of students reported nursing to mean caring, including helping, giving care and comfort. Most the respondents still have the stereotyping perception that nursing is nothing but equivalent to doctors' hand maiden and doest not required much thinking and lack of opportunity to pursue higher education. Not many of them realized that nurses are working with autonomy. Similarly to Hemsley et al. (1999) study, he found that most young people perceive medical knowledge and skills that underpin the work of nurses to be within their grasp; nurses do not have own scientific based knowledge.

The relationship between the perceptions of nursing was significant with p value of 0.01 and r = 0.649. The result indicates that is strong positive correlation. The positive perception on nursing will contribute to better performance of students. However the perception on course has weak correlation with performance with r = 0.162 and p value of 0.027, most of the student has negative perception of nursing course. Their perception has show discrepancy of not having anticipated the amount and depth of scientific knowledge required for them as stated by Harvey et al. (1997). The positive and accurate perception of nursing and nursing course is important to prepared new entrant to face the challenge of nursing course. The perception of course load is associated with test anxiety ((Sansgiry et al., 2006).

CONCLUSION

In short, it is timely for us to change the public perception on nursing in order to attract more students who have better academic qualification and aptitude. Strategies need to be taken to improve the public impression on nursing through media, newspaper, giving career talk. Nurses should work together with teachers, clinic leaders, and professional organization, policy maker, hospital administrator and government to address the issues in shortage of nurses and improving the quality of nurses.

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THE SKILLS AND COMPETENCIES OF DE LA SALLE UNIVERSITY-DASMARINAS SY 2003-04 BUSINESS GRADUATES AS PERCEIVED BY EDUCATORS AND THE INDUSTRY

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ABSTRACT

This study attempted to determine the existence of congruence or incongruence of what is taught to the business graduates and what is needed by business sector. Through the survey administration, the perceptions of business practitioners and educators with respect to issues such as the skills and competencies needed by business, the relevance of the following criteria in evaluating the business curriculum and criteria in recruiting business graduates were discussed.

T-tests performed on the mean differences in responses revealed that there exists an over-all congruence between the perceptions of the business sector and the business school on the competencies actually contributed by CBA graduates to their jobs and the competencies developed in DLSU-D. However, incongruence exists in certain knowledge/skills needed by the business sector and the knowledge/skills actually contributed by the DLSU-D CBA graduates to their jobs. The results of the Wilcoxon-Mann-Whitney Rank Sum test performed on business sector needs and CBA teachings do not support the research hypothesis of the study.

INTRODUCTION

The decision to invest in education is a desirable one since it increases the likelihood of finding more highly paid employment in the future. For an ordinary constituent, it increases the likelihood of finding more highly paid employment in the future. Improved knowledge and skills also enable workers to perceive technological change more clearly and to adapt to it more effectively. Furthermore, in the context of globalization and the new knowledge economy, in which technological change increases rapidly, it can be expected that labor demand pressures will require a more educated and skilled work force.

It is at the transition period from higher education to the labor market that graduates have to link the knowledge and skills acquired in college to the competencies required at the workplace. Skill refers to the proficiency that is acquired or developed through training or experience (American Heritage Dictionary, 2007) Competencies on the other hand, refer to the combination of learning abilities, analytical abilities and problem solving abilities (Sattinger, 1993). Employers prefer employees with good work values such as honesty, commitment, hard work and industry, competence, promptness and punctuality, integration, courtesy, respect for the rights of others, patience and initiative. It is also

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important for graduates to possess communication skills, good grooming, and other social skills.

In Philippine higher education, enrollments in business education programs have increased rapidly in recent years. Technological skills, cross-cultural abilities and global capabilities, particularly computer knowledge, are expected in the workplace in the advent of globalization. It is indeed a challenge for the Philippine labor force to be competitive in a global marketplace, thus the need to heed the call for competent and innovative workforce.

REVIEW OF LITERATURE

It is necessary that schools prepare their graduates adequately for life after graduation In this aspect, employers can regard a school's graduates as "products" for consumption (Sirvanci,1996). Their performance as employees is considered as an indication of their quality and is indicative of the school's ability to provide adequate training.

A tracer study of the Commission on Higher Education (CHED) likewise stressed the need to establish constant communication with the industry in order to resolve the disparity between what the academe produces and what is needed by the labor market (Torres, 2002). The call for higher education to be relevant to the needs of the industry impinges on schools to evaluate their programs.

In studying the external productivity of a tertiary program, Zwaenepoel (1985) suggested that research on the graduates of a program should be done at least three years after graduation if the program is formal, or one year if the program is non-formal. He explains that if the evaluation is conducted more than three years after graduation, the respondents may no longer be able to associate the identified benefits or accomplishments to the school training that they had received. The purpose of the external effectiveness is to measure the extent to which the values and skills acquired through the educational process have been utilized by the graduates to ensure their personal growth and to improve the quality of their lives and that of the community.

The Gap Model in Business Education

A number of researchers had employed the gap model in researches involving the quality of education. Lewis & Ducharme (1990) set out to determine how well the business schools in the United States were meeting the needs of the business sector. Their study concluded that, with the exception of some specific areas in the United States, no gap existed between the expectations of business schools and those of the business sectors. Gutierrez-Nugraha (1997) built on the study of Lewis & Ducharme (1990) and tested whether business schools in the Philippines were producing the kind of graduates that the business sector needed. Her findings showed that there was an over-all congruence between the skills possessed by business graduates as perceived by the business sector and the skills taught by the business schools.

Conceptual Framework

The graduates of educational institutions possess the minimum skills/attributes that the school perceive as necessary for life after schooling, be it employment or owning a business. Preparing them adequately for a particular job is, to a large extent, dependent on the quality of education provided by the institution. Their actual performance may be considered as a function of the school's ability to deliver the various educational services. Heijke, Meng & Ris (2003) added that human capital competencies do not influence the wage directly but only through their impact in earlier stages of the young graduate's career or early years of work as a professional. In this study, only graduates of two years or those who graduated in school year 2003-04 and who have been employed by the business sector (their employer) for six months or more.

The study used the modified model of service quality developed by Parasuman, Zeithaml & Berry (1985) which states that the key to ensuring good service quality is meeting or exceeding what the industry expects. The conceptual framework is shown in Figure 1.
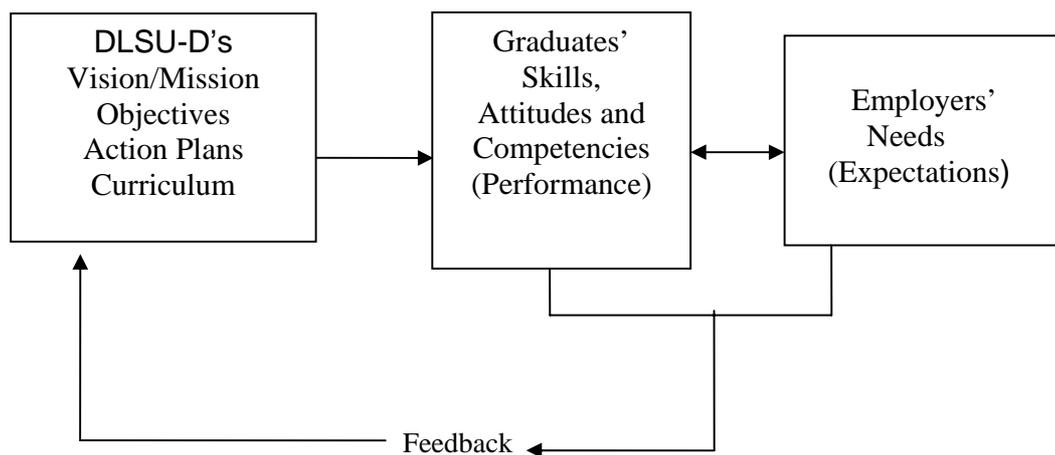
Figure 1. Conceptual Framework of the Study

The study was aimed at determining the existence of congruence between the knowledge and skills taught by the CBA educators to its graduates are really what the business sector needs.

The specific objectives of the study include: to determine the relative importance of the criteria in evaluating the DLSU-D CBA undergraduate programs, to identify the criteria in recruiting business graduates, and to determine the knowledge/skills and competencies developed by the DLSU-D CBA among its graduates are really what the business sector needs.

The hypothesis of the study posits that there are no differences in the mean perception of business sector and CBA faculty on the skills/knowledge and competencies required by the industry from the CBA graduates and what is taught to them.

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The study utilized the survey method. It was carried out from October 2005 to September 2006. The first group of respondents was the employers of the DLSU-D CBA graduates of SY 2003-04. The systematic sampling method was also used to identify the second group of respondents: full-time and part-time faculty, and administrators of the College of Business Administration (CBA), DLSU-D. Of the 75 DLSU-D CBA faculty members, 62 were chosen as the respondents of the study.

From a total of 649 CBA graduates in SY 2003-2004, the study employed a sample size of 241 employer respondents. No CBA graduate had the same employer. Only those employed for more than 6 months in their place of work were chosen as respondents.

The listing of the skills used in the questionnaire were culled by M.G. Nugraha (1997) from the prospectus of various business schools in Metro Manila, Philippines. The listing of the competencies was based on the article of R.M. Wentling (1987) of Illinois State University, regarding the role of business education in the teaching of general skills and knowledge needed by graduates for employment.

RESULTS AND DISCUSSION

T-tests were used to test the null hypothesis that the two groups (business sector and faculty) of respondents have the same average perceptions with respect to criteria in recruiting business graduates. Four of the nine criteria yielded statistically significant differences at the $p<.01$ level: maturity/character/attitude, motivation/drive, personality, pre-employment results, communication skills and academic performance while the personality criteria showed a significant difference at the $p<.05$ level. The higher rating of the business sector on the above-mentioned criteria suggests that the business sector place more importance on the above-mentioned factors when they recruit graduates. This implies that the academe must emphasize these to the graduating students and conduct measures on how to improve these areas. The differences in the mean perception of the business sector and the business school on communication skills, extracurricular activities, work experience and reputation of DLSU-Dasmarinas, are not significant.

T-tests were also used to test the null hypothesis that the two groups (business sector and educators) of respondents have the same average perceptions with respect to the criteria in evaluating the curriculum. Of the four criteria, only the undergraduate curriculum criterion presented a significant difference at the $p<.05$ level whereas faculty reputation, university reputation and research reputation yielded a significant difference at the $p < .01$ level. The high rating of the business sector compared to the rating of the business school suggests that the business sector puts more importance in the above-mentioned three criteria.

The perception of the business sector and business school on the knowledge/skills actually contributed by CBA graduates to their jobs and the competencies developed in the business school revealed that there were 2 out of 10 skills and knowledge abilities which yielded a significant difference at the $p < .01$ level: adapting to organizational culture and systems, and understanding the principles of human behavior in organizations. On the other hand, the following skills presented a significant difference at the $p < .05$ level: performing financial planning and analysis, understanding the principles of computerized information systems, and carrying out production and operations research. Both sectors agreed that the above-mentioned skills are relevant in the job performance of the newly-hired graduates and their acquisition of

these skills and competencies is deemed important. This probably calls for a retooling seminar in teaching methodology for the faculty. The CBA Administration might care to look at the relevance of some of the subjects taught in the College. Workshops are highly encouraged to provide a platform for promoting exchange and dialogue with the businessmen in issues ranging from curriculum reform in terms of content and methodology.

The t-test results revealed that there is a significant difference at the $p < .01$ level in the mean perception of the educators and business sector in 6 out of 10 competencies actually contributed by the CBA graduates and the competencies developed in the business school: working with others as part of a team, adapt to changing work conditions, deliver clear and concise written account of his work results, using computer hardware and software, organize and analyze relevant data, and making sound and timely decisions based on careful analysis. In addition, two more competencies have a significant difference at the $p < .05$ level: delivering a persuasive oral presentation, and carrying out the various bookkeeping tasks of his or her respective department. By providing work or plant internship, a strong practicum program and field work could also guide the business students in imbibing the values, proper attitude and work ethics to prepare them for industry experience. Therefore, an educational reform entailing government-industry-academe collaboration is highly called for.

The Wilcoxon-Mann-Whitney test yielded that there's no statistical difference in the mean perception of the business sector and academicians on all the knowledge and skills actually contributed by the CBA graduates to their jobs, and the knowledge and skills taught in the CBA, thus indicating congruence. Furthermore, it revealed that the educators emphasized the teaching of the following areas of knowledge to a great extent (presented in order): business ethics, computerized information systems, human behavior in organizations, business, labor and tax laws, organizational culture and systems, marketing concepts and theories, financial planning and analysis, principles of accounting, production and operations research, and micro and macroeconomic theory. On the other hand, the business sector distinguished the four skills that they perceived to be important: organizational culture and systems, human behavior in organizations, computerized information systems, and business ethics.

The Wilcoxon-Mann-Whitney test also showed that there's no significant difference in the mean perception of the business sector and educators in 8 out of 9 competencies actually contributed by the CBA graduates to their jobs and that taught in the business sector; thus indicating congruence: working as part of a team, report writing, problem solving, oral report, computer operation, data gathering, book keeping and decision making.

The educators emphasized the following competencies to a great extent: working with others as part of a team, adapt to changing work conditions or tasks, public speaking, report writing, problem solving, computer information, decision-making, while data gathering and organizing, and bookkeeping to a moderate extent; in that order. On the other hand, the business sector indicated that they prioritized the following competencies: working with others as a team, adaptability to various work roles, data gathering, report writing, computer operation, decision making, oral report, problem solving, and book keeping, in that order.

SUMMARY AND CONCLUSIONS:

The study was aimed at determining the existence of congruence between what is taught in the DLSU-D College of Business Administration and what is actually needed by the business sector.

The study intended to determine whether the skills/knowledge and competencies of the CBA graduates, as perceived by their employers and faculty, are really what the business sector needs.

Responses to the questions on the criteria in recruiting business graduates revealed that there's a significant difference in the mean perceptions of the business sector and the academe on maturity/character/attitude, motivation/drive, personality, pre-employment results, communication skills and academic performance. Since the differences in the mean values are statistically significant, the null hypothesis is rejected. The higher rating of the business sector on the above-mentioned criteria suggests that the business sector place more importance in them more than the educators do.

Of the four criteria in evaluating the curriculum, the responses revealed that the rating of the business sector is higher than that of the business school: faculty reputation, university reputation and undergraduate curriculum. On the other hand, the CBA faculty's assessment of research reputation is higher than that of the business sector. There are significant differences in the mean perceptions of the business sector and business school in all the 4 criteria so the null hypothesis is rejected.

The skills and knowledge responses revealed that both sectors agreed that the following skills are relevant in the job performance of the newly-hired graduates: adapting to organizational culture and systems, understanding the principles of human behavior in organizations, performing financial planning and analysis, understanding the principles of computerized information systems, and carrying out production and operations research. This implies that educators should put more emphasis in the curriculum planning and effective delivery of instruction.

On the other hand, responses on the competencies actually contributed by CBA graduates to their jobs and the competencies developed in the business school: working with others as part of a team, adapt to changing work conditions, delivering clear and concise written account of his work results, delivering a persuasive oral presentation, using computer hardware and software, organizing and analyze relevant data, making sound and time understanding and carrying out the various bookkeeping tasks of his or her respective department. The null hypothesis must be rejected.

The Wilcoxon-Mann-Whitney test yielded that there's no statistical difference in the mean perception of the business sector and academicians on all the knowledge and skills actually contributed by the CBA graduates to their jobs, and the knowledge and skills taught in the CBA, thus indicating congruence. It also revealed that there's no significant difference in the mean perception of the business sector and educators in 8 out of 9 competencies actually contributed by the CBA graduates to their jobs and that taught in the business sector; indicating congruence:

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STUDENT PRIORITY AND SATISFACTION WITH UNIVERSITY SERVICES IN A DISTANCE EDUCATION INSTITUTION

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ABSTRACT

A priority-satisfaction survey administered during the 2005 academic year provides a crucial foundation for Open University Malaysia (OUM) in its assessment of its ability to meet learner needs as it moves forward. Careful attention to addressing learner concerns regarding facilities, support services and the total educational experience should pay enormous dividends in enhancing learner satisfaction. Using the importance and satisfaction ratings from the survey results, a performance gap was computed for each item and dimension by subtracting the satisfaction from the priority rating. The performance gap provides a measure as to how well OUM is meeting its learner expectations for a quality educational experience. The larger the performance gap for a particular item or dimension (i.e. high importance and low satisfaction), the greater the concern for improvement so as to increase learner satisfaction. The results of the survey showed that the performance gap score ranged from 0.35 to 1.12, which corresponds to an 11 to 14 percent gap between student priority for services and their satisfaction. Six major areas considered in the priority-satisfaction study are Student Records Management, Registration and Orientation, Learner Centredness, Student Affairs, Assessment and Teaching and Learning.

INTRODUCTION

Increasingly higher education is being viewed as a "business" with students considered as its customers. This has been accompanied by a general shift in the financing of higher education away from the public purse and increasingly towards the virtual privatization of even so-called "public" universities. Under such circumstances, student satisfaction surveys become an important part of University management with student opinion about service delivery and related issues being sought by higher education institutions worldwide (Douglas, Douglas & Barnes, 2006).

Rowley (2003) has identified four major justifications for seeking student feedback which are (i) to furnish evidence that students have the opportunity to comment on services and that such inputs are used to improve the services; (ii) to encourage their reflection on university learning; (iii) to permit universities to benchmark and develop indicators that will allow the identification of the university's reputation in the marketplace; and (iv) to permit students to provide their level of satisfaction with the academic experience.

There is a dearth of published institutional research in the area of student satisfaction with support and related services, particularly from the Southeast Asian region. Nevertheless, a literature search did locate some projects of this nature undertaken in more developed countries, particularly in North America and Europe. A study by Standing (2004) indicates an important limitation of such student satisfaction surveys, in particular, a significant proportion of students may not hold strong views about many of the student services since they may not often need to use them. This factor may assume greater relevance in terms of the present case study where distance education tends to separate the student physically from the campus then would be the case with the traditional on-campus programs. Clearly this constitutes an important constraint on the present study.

Athiyaman (1997) studied the links between student satisfaction and service quality within the context of an Australian institution that offers a number of its programs via the distance education mode. One of the recommendations made by this author for future studies was the need to consider varying viewpoints according to the different segments of the University student population. In particular, it was suggested that the various satisfaction items could usefully be cross-tabulated with demographic variables such as students' gender and the like to ascertain differences in perceptions. The present study will be taking up this point and will consider a number of demographic variables including gender, age, ethnic group (given Malaysia's multi-cultural nature), income and the like.

A University of Alabama (2002) study explored the relationship between demographic aspects of student satisfaction with particular areas of university services. For instance, it found that African-American students expressed greater satisfaction than White students regarding the career service and slightly lower satisfaction with student voice in university policies; the availability of student housing, religious activities and programs, opportunities for personal involvement in campus activities etc. Similarly the University of Alabama study did consider gender differences in satisfaction with the general finding that there were not many differences between the sexes regarding student life issues.

It is crucial for OUM, being a private organization, to conduct its yearly priority-satisfaction survey, the results of which will be useful in developing awareness to the institution and guiding it in its institutional planning. Other than that, the results will also contribute towards the process of setting OUM's retention strategies; marketing and recruitment; preparing for accreditation; quality management and in preparing short and long term budget decisions. Of direct importance is perhaps in providing feedback to the faculties, learning centres, departments, staff and learners. The results would also assist OUM in identifying specific expectations of different demographic groups of learners.

Satisfaction, however can be defined in so many ways, and in the context of this study, it is defined as "when expectations are met or exceeded by learners' perception of the services". Expectation serves as the point from which students make qualitative judgments of the services. If satisfaction were to be assessed outside of the context of student expectations, there is always the risk of working on areas that will not result in any retention payoff. In fact, the over arching objective of having the priority-satisfaction survey is in line with what Noel-Levitz (2003) has described: "Making the decision to regularly assess student expectations and levels of satisfaction can provide institutions with the insurance policy they need to maintain their edge in the academic marketplace. Students whose needs are actively addressed by their institution are more likely to be successful in achieving their educational goals and more likely to persist - and ultimately become the institutions' best ambassadors and future benefactors."

METHODOLOGY

The Instrument

A quantitative survey was designed at OUM to elicit student priority for services (using a seven point importance scale with 1= not important at all and 7= most important) and their perceived satisfaction with the services also on a seven point scale (1= not at all satisfied and 7= most satisfied). The questionnaire was structured to seek student opinion of six major dimensions which are Student Records Management, Registration and Orientation, Learner Centredness, Student Affairs Management, Assessment and Teaching and Learning.

The questionnaires were out by e-mail to 28 Learning Centres and were distributed to learners in the last Tutorial Session of the September 2005 Semester. The results presented below are based on 2,946 completed and usable surveys forms representing 12.5% of the total student population.

The Variables and Data Collection

Part I of the questionnaire attempts to collect the demographic data of the learners. These information include: Gender; Age; Ethnic group; Marital status; Programme of study; Active Semester; CGPA; Source of Finance; Name of Learning Centre; Distance between Home and Learning Centre; Job Sector and Monthly Income

Part II seeks to collect information on the priorities and perceived level of satisfaction of learners on each of the 68 items. The items were grouped into six dimensions of: Students Record Management; Registration and Orientation; Learner Centeredness; Student Affairs Management; Assessment Management and Teaching and Learning. The priority and satisfaction means for each dimension, and the performance gap, that is the difference between the priorities – satisfaction scores for each item and dimension were also determined.

Part III discusses the Priority-Satisfaction Matrix for all six dimensions of the support services provided by OUM.

Part IV describes the overall learners' response on the preference of OUM as a learning institution.

LIMITATIONS

The priority-satisfaction survey is a broad, comprehensive overview of students' experiences that provides gross indicators of how well OUM is doing in meeting students' needs. General questions about satisfaction do not provide us with data on how to improve our services and/or what aspect of an area students expressed either satisfaction or dissatisfaction. Further efforts are needed to provide greater depth and meaning to the survey findings. In addition, some questions are written based on the needs of the institution. Finally, inherent to survey research are limitations of imprecision, such as bias associated with the wording and ordering of questions and with sampling error. Given the nature of sampling, certain groups may be slightly over- or under-represented in the sample when compared to the population.

RESULTS AND DISCUSSION

Part I: Demographic and Related Variables

Analysis of the demographic variables reveals that a majority of respondents were female (61.6%), in keeping with the student profile of the general student population of 23,780 with 57% female and 43% male (as of Sept 2005). In terms of ethnic group, nearly 83% of the students were drawn from the Bumiputera, 8.9% Chinese and 8.3% Indians, again in keeping with the ethnic profile of the general student population comprising of 80% Bumiputera, 9.3% Chinese and 7.6% Indians. A large majority (78.8%) of respondents were married, leaving about 20% who were singles. It also reveals that more than 86% of the respondents were over 25 years of age, about 10% were below 25 years and 3% were over 46 years old.

Part IIA: Priority and Satisfaction Ratings by Items

A) Priority

The mean priority scores for all the 68 items range from the 4.61 to 6.19. Table 1 below indicates the ten highest and ten lowest priority items.

Table 1: Highest and Lowest Priority Items

Rank	Highest Priority	Lowest Priority
1	Online examination results	Involvement of senior learners in new learners orientation programme
2	MyLMS facilities	Co-curricular activities
3	Modules	Time allocation for new student orientation programme
4	Online course information	OUM student clubs at LCs

5	Online tutorial slots	New learners orientation programme
6	Time allocation for answering examination questions	Fee payment via credit card
7	Caring OUM tutors	Meetings with staff of CSA
8	myCourse information	Counseling workshops
9	Online registration	Disciplinary actions on plagarism
10	Examination scheduling	English modules

B) Satisfaction

The means satisfaction scores for all the 68 items range from lowest 4.11 to 5.93. Table 2 below shows the ten most satisfied and ten least satisfied items.

Table 2: Most Satisfied and Least Satisfied Items

Rank	Most Satisfied	Least Satisfied
1	MyLMS facilities	OUM student clubs at LCs
2	Personal information in myProfile	Involvement of senior learners in new learners orientation programme
3	myCourse information	Co-curricular activities
4	Examination scheduling	Counseling workshops
5	Examination invigilation	Skills training (eg: computer, English, writing)
6	Caring OUM tutors	Time allocation for new student orientation programme
7	Conducive examination hall	New learners orientation programme
8	Online course information	Fee payment via credit card
9	Face-to-face discussion in tutorials	Meetings with staff of CSA
10	Online examination results	CD-ROM as supplementary learning material

Part IIB: Gap Analysis of Priority and Satisfaction

An important aspect of the survey was to identify the gaps between priority ascribed to the six dimensions in the survey and their perceived satisfaction by learners. A performance gap greater than 1.0, or 16.7% based on priority indicates that the university is not meeting learners' expectations, less than 1.0 (16.7%) is generally regarded as meeting learners' expectations and a negative performance gap indicates that the university is exceeding learners' expectations.

This issue is discussed for each of the dimensions in the ensuing paragraphs.

Student Records Management

Table 3 provides the gap analysis of the Student Record Management activities. It reveals an overall gap of just greater than 13% between mean importance and satisfaction with

each of the sub-groups covered sustaining a statistically significant difference. The largest gaps in respect to student record management activities relate to *online tutorial slots* (18%), *information regarding credit transfer* (15%) and *online examination results* (15%). However, the narrowest gap was in relation to *online information on my profile*.

Table 3: Student Records Management Gap Analysis

	Piority	**Satisfaction**	**PG**	**% Gap**	**t**
Information regarding credit tansfer	5.66	4.79	0.87	15.4	21.4
Duration for credit transfer	5.52	4.75	0.77	13.9	19.7
Online Information on myProfile	5.97	5.44	0.53	8.9	15.7
Online registration	5.97	5.19	0.78	13.1	21.3
Online tutorial slots	6.01	4.94	1.07	17.8	28.1
Online examination results	6.17	5.26	0.91	14.7	26.3
Matric card	5.71	4.98	0.73	12.8	18.4
Online financial statement	5.84	5.20	0.64	11.0	17.7
Online course information	6.02	5.30	0.72	12.0	21.9
Overall	**5.87**	**5.09**	**0.78**	**13.3**	**NA**

An overall score concerning the Student Records Management satisfaction was computed for each student with a view to probing the effects of demographic variables on this dimension. Statistically significant results were noted in the following areas (note: only sub-populations with relatively large numbers were considered due to greater expected stochastic variations with smaller groups):

- Male students (5.17) were more satisfied than females regarding Student Records Management (5.09, $t=1.98$, $p<0.05$).
- There is a gradual increase in mean satisfaction with Student Records Management with student age with the 46 years and older students (5.29) sustaining a significantly greater mean satisfaction than their younger 19 to 25 age group counterpart (4.98, $t= 3.34$, $p<0.01$).
- Regarding ethnicity, the Malays (5.08) and Chinese (5.08, $t=0.07$, $p>0.05$) sustained similar satisfaction levels; however, Indians (5.32, $t=3.13$, $p<0.01$) were more satisfied than the largest group (Malays); similarly the other Bumiputera group (5.39, $t= 3.57$, $p<0.01$) were more satisfied than their Malay counterpart.
- The single students (4.97) were less satisfied overall with Student Records Management than was the case with their married counterparts (5.16, $t= 3.66$, $p<0.01$)
- Self funded students (4.99) expressed less satisfaction than the KPM Scholarship students (5.20, $t=3.46$, $p<0.01$).

Registration and Orientation

Table 4 specifies the mean differences between priority and satisfaction for student registration and orientation functions. It is noted that all the differences were statistically significant. Overall the gap between priority and satisfaction was one of the lowest in relation to the six dimensions (11%). Nevertheless, in one of the areas, namely, *problem solving by Learning Centre staff* is clearly an activity of some concern where student expectations are not being met (gap of 18%).

Table 4: Registration & Orientation Gap Analysis

	Piority	Satisfaction	PG	% Gap	t
Learners' handbook	5.69	5.13	0.56	9.8	15.8
Learning centres (LC)	5.8	5.04	0.76	13.1	21.5
Problem solving by LC staff	5.77	4.73	1.04	18.0	27.2
Orientation program for new learners	4.96	4.58	0.38	7.7	9.5
Duration of orientation for new students	4.92	4.57	0.35	7.1	8.2
Involvement of seniors in orientation	4.56	4.17	0.39	8.6	9.1
Staggered fee payment	5.71	5.08	0.63	11.0	15.4
Payment via credit card	5.08	4.59	0.49	9.6	11.4
Receipt of course modules	5.96	5.22	0.74	12.4	19.5
Overall	**5.38**	**4.79**	**0.59**	**11.0**	**NA**

As with the Student Records Management, an overall score concerning the Registration and Orientation satisfaction was computed for each student with view to probing the effects of demographic variables on this dimension. Statistically significant results were noted in the following areas (note: only sub-populations with relatively large numbers were considered due to greater expected stochastic variations with smaller groups):

- The two major ethnic groups (Malay and Chinese) did not sustain any significant difference in satisfaction regarding Registration and Orientation activities. However, Indian students (4.99) sustained greater satisfaction regarding this dimension than was the case with Malay students (4.77, t= 2.83, p<0.01).
- Married respondents (4.82) were more satisfied with Registration and Orientation functions than single students (4.71, t=2.07, p<0.05).
- Students who were self-funded (4.74) tended to be less satisfied with these activities than that observed with KPM scholarship students (4.84, t= 1.78, p<0.05).

Learner Centredness

Table 5 furnishes the data on the performance gap in the area of learner centredness with an overall gap of over 14%. Relatively large gaps are noted in respect to *tackling the problems* that student encounter in relation to their learning immediately (17%), *channelling of problems via the phone* (17%), *channelling of problems via emails* (16%) and *concern of University staff towards students* (16%). But the gap between

priority and satisfaction was relatively narrow regarding *concern of tutors towards their students* (11%). Again all the observed mean differences were statistically significant.

Table 5: Learner Centredness Gap Analysis

Items	Piority	Satisfaction	PG	% Gap	t
Problems are attended to immediately	5.69	4.70	0.99	17.4	25.6
Problem via phone	5.64	4.67	0.97	17.2	24.9
Problems via email	5.6	4.69	0.91	16.3	23.4
Announcement in website	5.89	5.21	0.68	11.5	19.8
Administrators are easily contactable	5.65	4.91	0.74	13.1	19.7
Meeting with learning centre staff	5.44	4.72	0.72	13.2	19.3
Problem solving by administrators	5.65	4.84	0.81	14.3	21.8
Concern of learning centre staff	5.66	4.82	0.84	14.8	22.4
Concern of staff towards student	5.67	4.77	0.90	15.9	23.9
OUM cares its learners as an individual	5.76	4.88	0.88	15.3	24.0
Concern of counselors	5.61	4.81	0.80	14.3	21.7
Concern of tutors	5.98	5.32	0.66	11.0	20.0
Overall	**5.69**	**4.86**	**0.83**	**14.5**	**NA**

An overall score concerning the Learner Centredness satisfaction was computed for each student with view to probing the effects of demographic variables on this dimension. Statistically significant results were noted in the following areas (note: only sub-populations with relatively large numbers were considered due to greater expected stochastic variations with smaller groups):

- Gender appears to be an important variable regarding the satisfaction with Learner Centredness overall mean score, in particular, male respondents (4.96) were more satisfied with this dimension than was the case with female students (4.84, t=2.71, p<0.01).
- Regarding ethnicity, the two major groups (Malays and Chinese) did not sustain statistically significant results on Learner Centredness. However, both Indians (5.05, t=2.25, p<0.05) and Other Bumiputera (5.03, t=1.97, p<0.05) were more satisfied than their Malay colleagues (4.86) in respect to this dimension.
- Student finance was an important variable regarding learner centredness in a few areas. More specifically students on KPM Scholarship (4.97) were more satisfied in this area than those financed through PTPTN (4.79, t=3.13, p<0.01) or self-funded students (4.81, t=2.49, p<0.05).
- Students on lower income, i.e. RM1000-RM2000 (4.91) were more satisfied with Learner centredness than students on higher income, i.e. RM 2001-RM3000 (5.00, t=1.70, p<0.05).

Student Affairs Management

Table 6 presents the importance/satisfaction gaps regarding the Student Affairs Management. It is noted that the overall gap (14%) was relatively large and that all the mean differences were statistically significant. However, the largest gaps were observed in respect of *learner skills training* (20%), *counseling workshops* (18%) and *learning centre facilities* (17%). But the narrowest gaps were observed regarding *penalty imposed on cases of plagiarism* (9%) and *penalty imposed on misconduct in an examination* (10%).

Table 6: Student Affairs Management Gap Analysis

Item	Piority	Satisfaction	PG	% Gap	t
Co-curricular activities	4.86	4.22	0.64	13.2	15.4
Student clubs	4.92	4.16	0.76	15.4	18.1
Penalty on plagiarism	5.37	4.89	0.48	8.9	12.8
Penalty on misconduct in examinations	5.65	5.08	0.57	10.1	15.4
Concern of student affairs for students	5.61	4.82	0.79	14.1	21.7
Skills training	5.62	4.50	1.12	19.9	27.3
Counseling workshop	5.33	4.36	0.97	18.2	23.9
Learning centre facilities	5.74	4.79	0.95	16.6	25.5
Learning skills workshop	5.66	4.85	0.81	14.3	23.2
Academic counseling by tutors	5.58	4.85	0.73	13.1	20.1
Meeting with student affairs staff	5.33	4.59	0.74	13.9	19.2
Overall	**5.42**	**4.65**	**0.77**	**14.3**	**NA**

As per other dimensions, an overall score concerning the Student Affairs Management was computed for each student with a view to probing the effects of demographic variables on this dimension. Statistically significant results were noted in the following areas (note: only sub-populations with relatively large numbers were considered due to greater expected stochastic variations with smaller groups):

- Ethnicity was not found to be an important variable with respect to the overall satisfaction with the Student Affairs Management, except for a particular case of Indian students (4.89) who were more satisfied than the other sub-groups, for example, Malay respondents (4.62, t=3.36, p<0.01).
- Similarly, MOE Scholarship students (4.71) expressed greater satisfaction with Student Affairs than was the case with self-funded respondents (4.56, t=2.47, p<0.01).
- The lower income students (those on RM1000 to RM2000, mean=4.68) were more satisfied with this dimension than the higher income group (RM2001 to RM3000, mean=4.56, t=2.25, p<0.05).

Assessment

Table 7 presents the gap analysis between importance and satisfaction for assessment activities. Again all the mean differences were statistically significant and the overall gap was just under 12%. The largest mean differences are noted for the item: *time given for completing assignment* (18%) and *the allocation of 5% marks for online participation* (15%). The gap was narrowest in respect to *examination invigilation* (9%).

Table 7: Assessment Gap Analysis

Item	Priority	Satisfaction	PG	% Gap	t
Time given for completing assignment	5.87	4.81	1.06	18.1	28.2
Location of examination hall	5.91	5.15	0.76	12.9	20.9
Examination invigilation	5.87	5.34	0.53	9.0	13.4
Examination scheduling	5.97	5.34	0.63	10.6	18.9
Previous examination questions	5.93	5.11	0.82	13.8	23.0
Allocation of 5% marks for Online Participation	5.73	4.88	0.85	14.8	19.9
Conduciveness of examination hall	5.93	5.31	0.62	10.5	18.0
Time allocated to answer examination questions	5.98	5.26	0.72	12.0	21.0
Tutor feedback in Tutor Mark Assignment form	5.82	5.07	0.75	12.9	21.8
Integration of assignment and module	5.89	5.09	0.8	13.6	23.2
Tests 1 and 2	5.87	5.19	0.68	11.6	19.9
Tutor feedback on Test 1 and Test 2 grades	5.88	5.19	0.69	11.7	20.5
Overall	**5.89**	**5.15**	0.74	**12.6**	**NA**

As before, an overall score concerning the Assessment satisfaction was computed for each student with view to probing the effects of demographic variables on this dimension. Statistically significant results were noted in the following areas (note: only sub-populations with relatively large numbers were considered due to greater expected stochastic variations with smaller groups):

- Gender is an important variable regarding satisfaction with Assessment, in particular, male students (5.26) were more satisfied with this dimension overall than was the case with female respondents (5.09, t=4.05, p<0.01).
- Age also appears to influence satisfaction with overall Assessment, with an increase in satisfaction with age (disregarding the groups with relatively small numbers). More specifically, students aged between 36-45 years (5.22) were more satisfied than their younger colleagues aged 19 to 25 years (5.06, t=3.54, p<0.01) and those aged between 26 to 35 years (5.13, t=2.12, p<0.05).
- Ethnicity does not appear to have much influence on overall satisfaction with the Assessment dimension with the exception of Indians (5.32), who are more satisfied than other sub-groups, for example, the Malay students (5.15, t=2.35, p<0.01).
- Married students (5.19) were more satisfied with Assessment activities than was the case with single students (5.03, t=2.99, p<0.01).

- The self-funded students (5.05) were less satisfied with Assessment than either the KPM Scholarship respondents (5.20, t=2.51, p<0.01) or PTPTN funded students (5.18, t=1.81, p<0.05).

Teaching and Learning

Table 8 specifies the gap analysis for teaching and learning with again all mean differences being statistically significant. The overall gap in terms of this dimension was relatively large (14%). The difference between importance and satisfaction was greatest in relation to the *digital library services* (18%), *CD-ROMS are useful* (17%), *internet linked computers* (16%) and *teaching equipment for tutorial sessions* (16%). However, the narrowest gap was noted for *online information in "myCourse"* (10%) and "*MyLMS" facilities* (10%).

Table 8: Teaching & Learning Gap Analysis

	Priority	Satisfaction	PG	% Gap	t
Internet linked computers	5.68	4.75	0.93	16.4	23.9
Digital library	5.68	4.68	1.00	17.6	25.4
MyLMS facilities	6.06	5.45	0.61	10.1	18.1
Online information in myCourse	5.98	5.39	0.59	9.9	17.8
Tutor responses in online forum	5.96	5.20	0.76	12.8	22.2
Modules	6.03	5.19	0.84	13.9	23.7
CD-ROMS are useful	5.59	4.65	0.94	16.8	23.5
Face to face discussions in tutorials	5.95	5.30	0.65	10.9	19.6
Personalized learning	5.51	4.82	0.69	12.5	18.0
Teaching equipment for tutorials	5.68	4.77	0.91	16.0	24.5
Modules in English	5.37	4.72	0.65	12.1	15.8
Additional tutorials	5.51	4.72	0.79	14.3	20.3
Face to face tutorials	5.85	5.18	0.67	11.5	19.1
Course duration	5.80	4.96	0.84	14.5	21.3
Faculty staff cares about my academic performance	5.65	4.80	0.85	15.0	22.2
Overall	**5.75**	**4.97**	**0.78**	**13.6**	**NA**

As per other dimensions, an overall score concerning the Teaching and Learning satisfaction was computed for each student with view to probing the effects of demographic variables on this dimension. Statistically significant results were noted in the following areas (note: only sub-populations with relatively large numbers were considered due to greater expected stochastic variations with smaller groups):

- Gender may be an important variable regarding the respondents' satisfaction concerning teaching and learning issues; in particular, male students (5.05) were more satisfied with this dimension than the female respondents (4.94, t=2.51, p<0.01).

- Similarly ethnicity was found to be statistically significant in a few sub-groups. More specifically Malay students (4.97) were more satisfied with Teaching and Learning than was the case with Chinese students (4.85, t=1.77, p<0.05). But Indian respondents (5.18) were more satisfied with this dimension than Malay students (4.97, t=2.74, p<0.01).
- Single students (4.91) were less satisfied with Teaching and Learning than married respondents (5.00, t=1.85, p<0.05).
- Student financial support was also found to be a factor that influences satisfaction with Teaching and Learning in a couple of cases. For instance, KPM Scholarship students (5.06) were more satisfied with this dimension than their PTPTN funded students (4.94, t=2.44, p<0.01). Further, the self-funded students (4.86) were less satisfied than their KPM scholarship colleagues with Teaching and Learning (5.06, t=3.53, p<0.01).

Summary of the Gap Analysis

The summary of the mean of priority and satisfaction as well as percentage of performance gap for the six dimensions is given in Table 9 and the lowest and the highest performance gap items are given in Table 10. The top three largest gaps are in the following dimensions: Learner Centredness (LC), Student Affairs Management (SAM) and Teaching and Learning (T&L). Not only are the performance gaps ratings highest, the corresponding satisfaction scores are also the lowest. Specifically, items such as *Problem solving by Learning Centre staff, Problems are attended to immediately, Problem via phone* (Learner Centredness); *Skills Training and Counseling Workshop* (Student Affairs Management) and finally, *Time given for completing assignment, Online tutorial slots, Digital library, CD-ROMS and Learning centre facilities* (Teaching and Learning) need to be looked into by OUM in order to better meet learners' needs.

In general, male learners, older learners, and married learners are more satisfied with the university services. The "Indians" and the "Other Bumiputera" (from Sabah and Sarawak) and learners who are on scholarships are also more satisfied than their counterparts.

Table 9: Mean Priority, Satisfaction and Percentage of Performance Gap by Dimension

Dimension	Priority	Satisfaction	% PG
Learner Centredness	5.71	4.89	14.5
Student Affairs Management	5.43	4.65	14.3
Teaching and Learning	5.76	4.99	13.6
Student Record Management	5.88	5.12	13.3
Assessment	5.89	5.15	12.6
Registration and Orientation	5.40	4.80	11.0
Overall	**5.68**	**4.93**	**13.2**

Table 10: Lowest and Highest Performance Gap Items

Items with lowest performance gap (%)	Items with highest performance gap (%)
Duration of orientation for new students	Skills training (computer, writing etc)
Orientation program for new learners	Counseling workshop
Involvement of seniors in orientation	Time given for completing assignment
Penalty on plagiarism	Problem solving by LC staff
Online Information on myProfile	Online tutorial slots
Examination invigilation	Digital library
Payment via credit card	Problems are attended to immediately
Learners' handbook	Problem via phone
Online information in myCourse	CD-ROMS are useful
MyLMS facilities	Learning centre facilities

Part III: Priority-Satisfaction Matrix

Overall Priority and Satisfaction

A summary of the mean priority and mean satisfaction of the six major dimensions are as shown in Table 9. A graph of satisfaction verses priority for all dimensions was plotted (Figure 1) with the X and Y axis intersecting at the mean values for priority and satisfaction respectively). The graph, which is also a matrix, reveals the following:

- Student Records Management, Assessment and Teaching and Learning are in the high priority high satisfaction quadrants suggesting a good match between priority and satisfaction for services in these three dimensions.
- However, Registration and Orientation and Student Affairs Management are in the low importance and low satisfaction quadrant - again suggesting that the priority is in congruence with services' satisfaction.
- Finally, Learner centredness is very close to the intersecting axis suggesting that both the priority for such services and their satisfaction level is very close to the medium mark. Again suggesting congruence between priority and satisfaction in terms of this dimension.

Figure 1: Graph of Priority and Satisfaction of Dimensions

Importance and Satisfaction of Dimensions
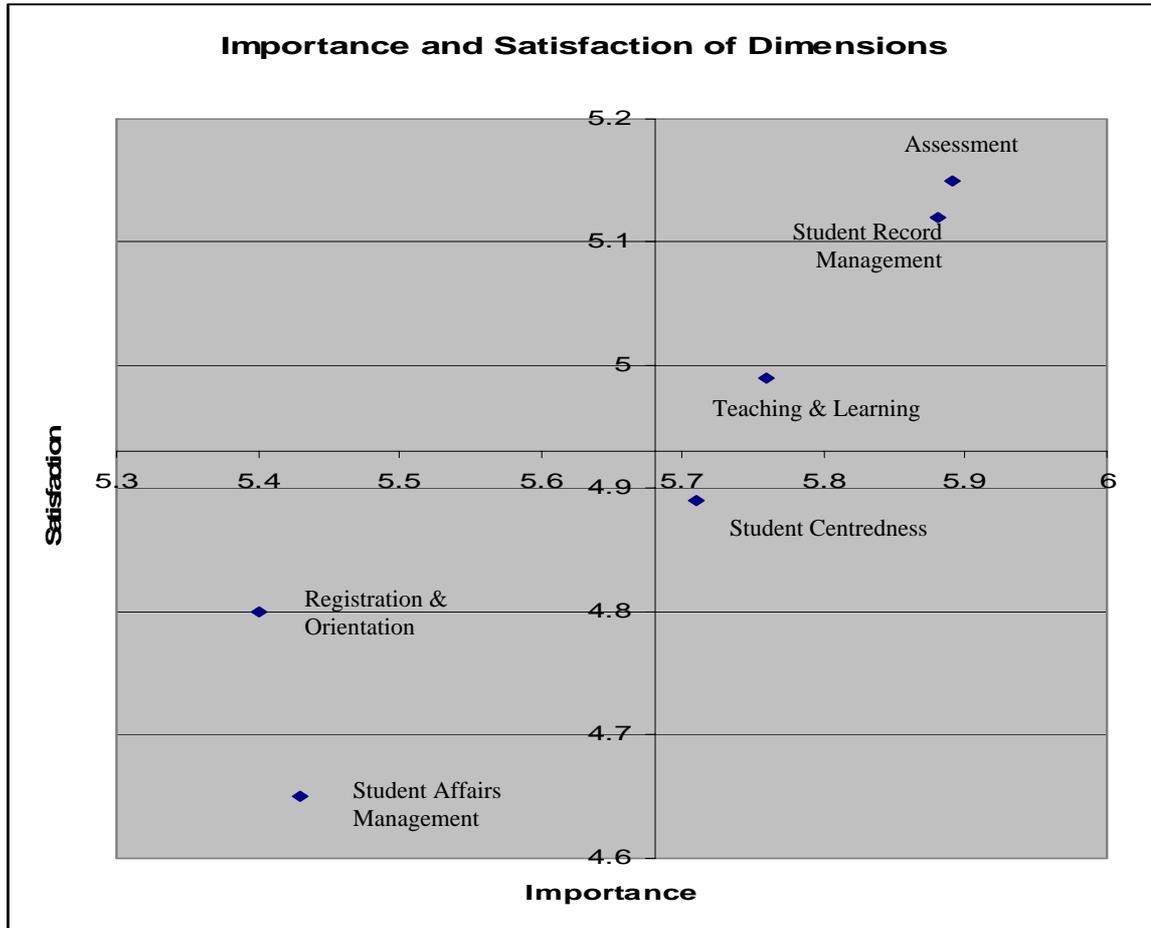
Part IV: Overall Satisfaction Level

Overall, a high 96.7% of the respondents feel proud of being an OUM learner; and 94.5% admitted that given a chance to go through the learning process again, they will choose OUM. Another high 95.6% admitted that they will encourage friends and family members to study in OUM, and 93.0% agreed that OUM is a University that is equivalent to other higher learning institutions in terms of quality (See Table 11).

Table 11: Learners' Response on Preference for OUM as a Learning Institution

Statement	% "Yes"'
If I am given the chance to go through the learning process again, I will choose OUM	94.5
I will encourage others (eg. Family members, and friends) to study in OUM	95.6
OUM is a University that is equivalent to other higher learning institutions in terms of quality	93.0
I am proud as an OUM student	96.7

A Chi-squared test indicated that there was no significant difference in the percentage of learners answering "yes" (more satisfied) by gender. However, there were significant differences by ethnic group, marital status, CGPA and employment status. The "Other Bumiputera" group of learners, those who are "married", those with "higher CGPA", and those who are "employed" hold very positive views about OUM.

CONCLUSION

This paper reports on the results of a priority-satisfaction survey administered at OUM for the 2005 Academic Year. The results indicate that OUM learners are quite satisfied with the services provided. Male learners, older learners, and married learners are more satisfied with the university services. "Indians" and the "Other Bumiputera" (from Sabah and Sarawak) and learners who are on scholarships are also more satisfied than their counterparts. However, OUM needs to improve on learner-centredness, student affairs management and teaching & learning. Finally, the Priority Satisfaction Matrix indicates that OUM is effective in allocating its resources to services most needed by its learners.

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GENERIC ATTRIBUTES: THE CASE OF MISSED PERCEPTIONS AND LINKS

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ABSTRACT

Knowledge based economy is the new buzz – word in the higher education and a lot of investment in terms of resources both physical and human is made in Pakistan. It is essentially required that we produce graduates which can further the process of development of Pakistan and are equipped with necessary skills which are generic across different disciplines.

The objectives of this study were to;

- identify the generic attributes required for a university graduate in Pakistan.

- examine if these attributes are in line with the societal demands for a university graduate?

- identify where in the curriculum these attributes are incorporated? and

- how these are assessed?

In the first part of this study we ask university teachers from various disciplines to identify the generic characteristics they would like to see in a university graduate for 21st century. Later, we looked at different curricula to examine if these attributes are addressed in the revised curricula.

The identified attributes were ranked according to the priority assigned and categorised in major themes. Results show some misperceptions about the attributes considering the age and stage of learners and have implications for higher education. Similarly none of the examined curricula addresses these attributes in their outcomes so the question of assessment does not arise.

There is an urgent need to define the generic attributes of a University graduate and direct the learning outcomes in the curricula developed by the Higher Education Commission to inculcate these attributes.

INTRODUCTION

Higher Education in Pakistan is currently undergoing a process of intense changes and is responding to a number of challenges through inception of Higher Education Commission (HEC) in 2002. One of the challenges that the higher education in Pakistan is facing is the view that it is not preparing the graduates to meet the employer demands and that the graduates so produced are not competent to participate actively in enhancing

the knowledge based economy. Since one of the objectives of the higher education is to equip the graduates meet with the demands of industry and society, it is essential to know how this objective can be achieved best. One of the ways to deal with this challenge is to identify what are the core competencies required of a university graduate irrespective of the course and program studied? The set of these core competencies are usually called as generic or graduate attributes.

Graduate attributes are the qualities, skills and understandings a university community agrees its students should develop during their time with the institution (Bowden et al, 2000) The Higher Education Council report in Australia emphasises that these skills should represent the central achievements of higher education as a process (Higher Education Council, 1992). These attributes include the disciplinary expertise as well as may include but not limited to teamwork, leadership, communication and information and technology (Snoke, 2003). A lot of work and research has been conducted worldwide in institutions of higher learning to identify and incorporate the generic attributes within their mission statement and is also linked with quality assurance protocols. However, no research studies from Pakistan have been reported to identify and discuss the generic attributes. This is an increasingly important area to be addressed because investment in higher education is one of the key areas of present government and a huge amount of resources both in terms of financial and human have been allocated for the higher education sector.
This study was conducted to

- identify the generic attributes required for a university graduate in Pakistan as perceived by the academics at public universities.

- examine if these attributes are in line with the societal demands for a university graduate.

- identify where in the curriculum these are incorporated? and

- how these attributes are assessed?

METHODS

In the first part of the study we developed a short questionnaire which comprises two sections. In the first section the faculty was required to identify five generic attributes in order of priority that they will like to see among a university graduate in Pakistan while the second part comprises closed ended questions regarding demographic data of the respondents.
The self – reported questionnaire was distributed among faculty members attending educational activities arranged by the Division of Learning Innovation in Islamabad. Participation was voluntary.
In the second part of the study we examined ten recently revised curricula to explore if the identified attributes have been incorporated in the curricula and if so to what extent the teaching and assessment methodologies address the inculcation of these attributes.

Results

Part A of the study

We received 172 complete forms. The closed ended responses were entered in the SPSS version 10 for the purpose of analysis. The open ended responses were examined individually by the authors to identify the common themes and to assign weighting according to the priority given to each attribute. Of the one hundred and seventy two respondents, eighty (46.5%) were female and ninety-two (53.5%) male respondents. The age group of the respondents was 35 or less (58%), Between 36 and 50 yrs (25%) and above 50 yrs (17%).

The generic attributes identified by the respondents are listed in Figure 1.
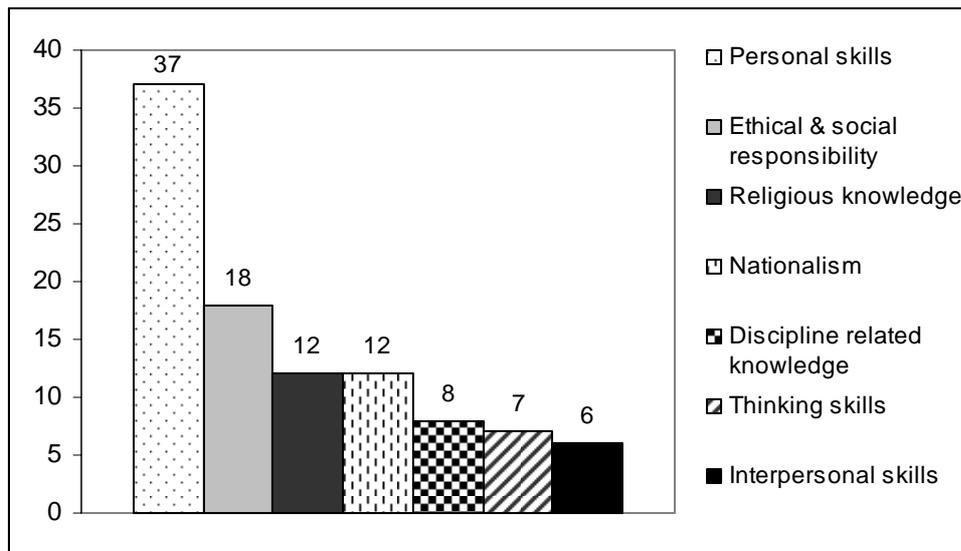
Figure 1 Generic Attributes identified by respondents (in percentages)

Part B of the study

We examined ten recently revised curricula available at HEC website to examine the extent of coverage that these curricula offered for developing these attributes if any. Surprising none of the curricula examined address the notion of generic attributes and only relies on discipline specific knowledge in still traditional forms of teaching and assessments.

DISCUSSION

There seems to be a misperception among the notion of what attributes a university graduate may have. If we look at the themes generated from the responses received the first theme emerged is personal skills which may be justified. Similarly ethical and social responsibility is a common theme identified in literature however nationalism and religious knowledge does not appear in any reported literature that we have studied. This has got implications for higher education because when any educational program is developed it needs to have clear outcomes and these outcomes should reflect at the age and stage of the learner. These two themes therefore need to be re- examined if this is the appropriate stage for the learners to be patriotic and have religious knowledge to fulfil the required obligation or this should have been done at some earlier stages of learning.

The remaining three themes i.e. discipline specific knowledge, thinking skills and interpersonal attributes are again very important but the interpersonal themes receive lowest ranking among all six themes which is alarming. The interpersonal themes including attributes like team work, communication skills and sometimes also referred to as corporate management skills (O'Hare, 2004) are critically important set of skills that an individual should possess especially from the perspective of employers. Table 1 provides an overview of the employer demands from the higher education sector and communication skills is one of the areas which when combined with in depth knowledge of the discipline is the top most outcome that employers expect from the prospective graduate (The University of Queensland, 2006). In another study regarding professional development of the academics in Pakistan communication skills was identified as the highest ranked area for further training (Siddiqui, 2006). One area that was not identified by any of the respondents is the competence in information technology which is again very important to be addressed if we want to develop lifelong learning and research skills.

Table 1 Employer perspective
Employers want graduates with
1. In depth knowledge
2. Effective communication skills
3. Independence and Creativity
4. Critical Judgment
5. Ethical and Social understanding

In short there is clearly identify among academics and stake holders to reach a consensus on identification of generic attributes which are in accordance with the societal demands and work collaboratively to develop them among graduates.

Two models have been proposed for developing the graduate attributes. The first model requires integration within curriculum and later as stand- alone modules. While none of the curricula examined by authors address the generic outcomes it is encouraging to see that a lot of efforts have been placed by offering stand alone modules through various discipline specific committees by the Commission (Higher Education Commission, 2004). The courses are of short duration and sporadic in nature which undermines the effectiveness of how useful they have been in developing the required attributes as there is no means of assessment or evaluation attached to them.

Literature suggests that graduate attributes are most effectively developed when they are embedded in curricula and has been supported by evidence that increase in discipline-nuanced generic skills has high positive correlation with increase in discipline-specific knowledge (Bath, 2004). A set of recommendations is therefore proposed which will further enhance the teaching and learning process in institutions of higher learning.

RECOMMENDATIONS

A working group may be formed within already existing discipline specific committees to

- oversee the development of an agreed set of generic attributes required of a university graduate through consultations with stakeholders which may be applied across all higher education courses

- develop and oversee the processes for the integration of these attributes within the prescribed curricula. A well refined process for embedding these attributes in the curricula is described by Bath et al in their case study (2004). (Table 2)

- assist the curriculum revision committees in incorporating these attributes within the curricula

- identify ways to evaluate the development of these attributes among graduates and how these can be linked to the process of quality assurance and accreditation.

Table 2 **Process for mapping and embedding graduate attributes within programs and courses**

Phases	Process	Issues to be addressed
Phase One	Graduate Attribute Transition	What do graduate attributes mean when applied to graduates of a program/sequence of study?
Phase Two	Course Stocktaking	How does each course support the development of graduate attributes?
Phase Three	Program Stocktaking	How does the whole program/sequence of study support the development of these attributes?
Phase Four	Review and Revision	How can the program/sequence of study may be refined to ensure the developmental sequence of graduate attributes (across course and across the whole program/sequence of study)?
Phase Five	Graduate Attributes integrated (mapped and embedded) within program/sequence of study.	

CONCLUSION

As the government of Pakistan is providing maximum resources in terms of funding to restructure and enhance higher education system, the institutions of higher learning are faced with challenge to produce graduates that are competent not only in their discipline but also posses a set of skills that helps them in contributing towards creating a positive image of Pakistan and be a socially responsible individual. In this study we had attempted to explore the perceptions of academics towards what attributes a university graduate may posses and if they are embedded in available curricula. Results indicate that there is a need to enhance the knowledge of what is expected of a generic attribute and why it is essential to be developed among a graduate. These may then be integrated in the curricula to provide appropriate learning experiences to the students for the development of these attributes. A set of recommendation has been therefore proposed in discussion which may be helpful for the policy makers and planners. One of the limitations of the study is a fairly small sample that conveys the perceptions of just one stakeholder i.e. the teacher. Further studies may be required to analyse the values placed upon essential graduate

attributes by different stakeholders represented by employers, students, members of the general community and educational researchers and administrators. This will help us in determining whether the different interest groups assign different values to the identified attributes. Similarly research studies addressing various aspects of the role of university education and generic attributes are required which could provide information within local context.

Acknowledgment

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THE STUDY OF INFORMATION SEARCHING AND DECISION MAKING OF NEW STUDENTS IN CHOOSING UNDERGRADUATE PROGRAM IN SURABAYA, INDONESIA

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ABSTRACT

Indonesia economic crisis has reduced universities budget, especially the private universities, in marketing their institutions. Due to this problem, private universities must have effort of finding ways so that they can still effectively and efficiently market their institutions by understanding the prospective students' pattern of behavior. This research aims at analyzing the prospective students' behavior of how they search information about universities they want to enter. Another attempt is to find the prospective students' process of decision making to choose the universities they want to apply. Survey is done in Surabaya city's private universities. Thus, this survey will provide us with information about sources of information for decision making, information seeker characteristics, information search process, and content of information analysis that are beneficial for the higher education institutions in designing the message of their promotion literatures (advertising, brochures etc). Furthermore, this survey also provides information about process of decision making, parties involved in decision making that are important in targeting and positioning the institution.

BACKGROUND

Indonesian macro economic condition which has been in bad condition brings a serious impact to educational sector. This condition depresses the higher educational institutions. Several private universities have been sold to other foundation because of the financial problem. Educational industry which was founded based on the idealism to educate the citizen turn to be similar to other service industries which can be transferred through the process of acquisition due to the lack of capital

The era of in which state universities become state owned corporate body force, the state university to do any efforts to cover their operational budget which was previously supported by government. Their efforts to get new students by establishing different programs for students recruitment has influence the market share which was previously covered by private universities. Private universities which can not obtain enough new students can not survive and automatically will be bought by other institution for their expansion. There are 305 higher educational institutions in East Java with 1488 departments (Kompas newspaper, 2007). East Java which only has three main educational cities (Surabaya, Malang and Jember) ideally should only have ten to fifteen private universities.

Although there have been many grant programs given by government to private educational institutions, these have not been maximally used by the institutions which

have limited financial support. Internal conflict in the institutions, limited qualified human resources and limited access for the information about the grants are considered to be the source to the inability to make use of the grants. This condition becomes worse by low awareness in marketing.

Marketing communication process will be more efficient and effective if information searching pattern and decision making pattern can be identified. Based on the need to keep the live of private universities and the efficiency of promotion, the writer will analyze information's search pattern and decision making pattern of students in undergraduate study in private universities in Surabaya.

RESEARCH DESIGN

The population is the first year students of private university in Surabaya. They were chosen as the subject in this study because they are considered to be able to remember the necessary information needed. Sampling method in this study is convenience technique in which the samples are easy to be obtained (Craig and Douglas, 2000). The defect of this method is the weakness in generalization (Aaker, Kumar and Day, 2001; Craig and Douglas, 2000) and not very reliable (Cooper and Schindler, 2001) but the positive side of this method is the efficiency in time and cost. Based on the time dimension, the data sampling is included in crossectional category in which the data are in one specific time then descriptive analysis is applied to answer the problems.

From 700 questionaires distributed, 449 returned and feasible for further analysis (respons rate 64.14%). The higher educational institutions of the respondents are presented in Table 1. All respondents come from school of economics and business. These six universities represent big, medium and small higher educational institutions in Surabaya. In terms of gender, most of the respondents are female (61%) as shown in Table 2. There is a tendency for women to study economics and business because these fields study are perceived to have better employability.. They also think that economics and business can bring them to be entrepreneurs.

To the question about time when the respondents decide to continue their study to university (either to state or private university), researcher found the results as shown in Table 3. Table 3 shows that 57% of respondents make a decision to continue their study at the third year. Indonesia education system which does not really support self learning influences the students not to decide their study program earlier. Their decision is made under time and social pressure. Based on the finding, higher education institutions best promote their institutions as soon as possible when their target markets are at the early years of senior high school. When it is to late, the students do not have enough time to consider their choices.

Table 1. Respondents Higher Education Institutions

Higher Education Institution	Number
Perbanas School of Business	76
University of Dr Soetomo	17

University of National Development "Veteran"	70
University of Bhayangkara	56
Indonesia School of Business	46
University of Surabaya	184
Total	449

Table 2. Gender
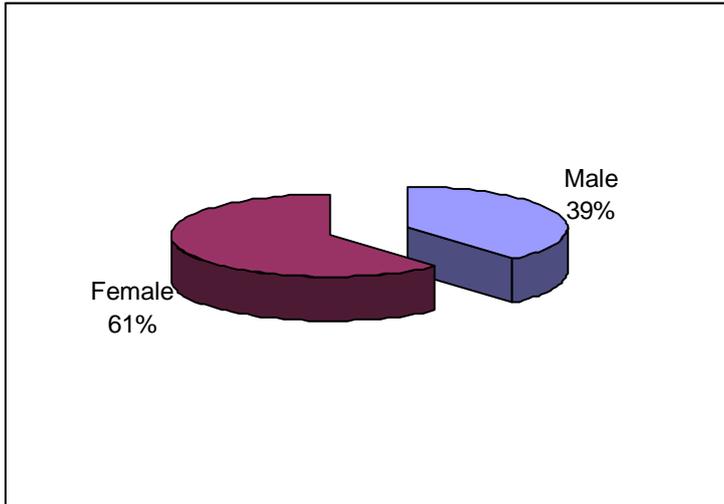
Table 3. Time decision to go to higher education institutions (either state or private university).
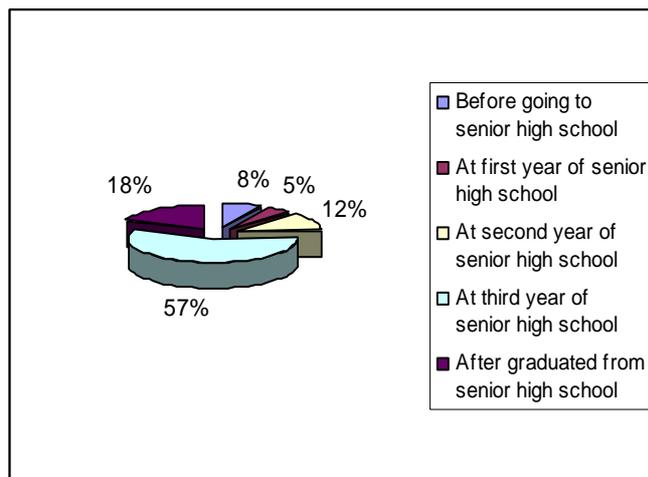
Information Search Pattern

In deciding to buy a product, consumers need some information which can be obtain from advertisement, friends or neighbor, even based on their own experience towards the product and then they will evaluate the information in order to make a decision. In this case, university's brochures should be designed as attractive as possible because most of respondents, as shown in Table 4, perceived them as the most reliable information source. Some universities still underestimate the importance of brochure's graphical design and completeness of the information available inside. They had better use graphical design agency to help them in designing the image of their institutions. Family members and friends are perceived by respondents as second and third reliable information source. Creating buzz marketing or viral marketing is an alternative. Buzz marketing is a combination of marketing through word-of-mouth with information technology, for instance email, video call etc. Universities can create community developments to succeed buzz marketing

Table 4. The most reliable information source
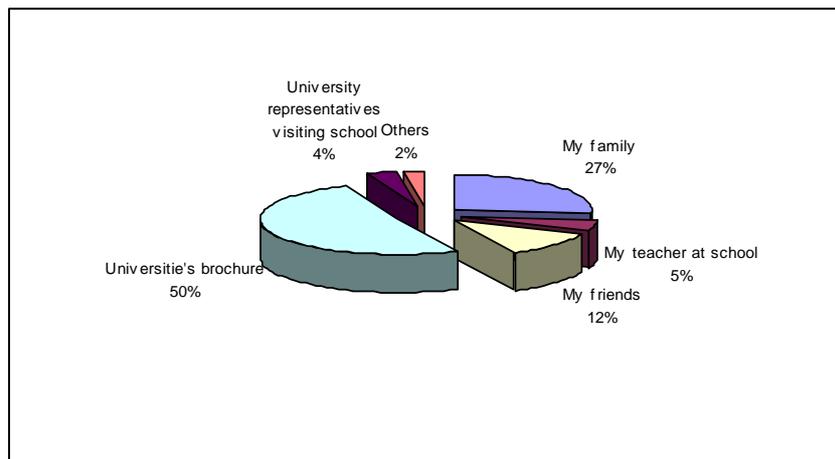
To the question "how far do you search information about private universities?", the result is shown in Table 5. Based on this finding, marketers should promote their higher education institutions around Indonesia because the market search for the information for most famous higher educations in Indonesia. So far, private higher education institutions tend not to market their institutions broadly because of budget constraint. Having network with target senior high schools around Indonesia is a must for private education institutions.

How respondents evaluate universities? Table 6 shows that 61% respondents mostly emphasize on study program accreditation. National education department categorize study program into three levels: A, B, C in which A is the highest rank. Higher education institutions should be able to develop their education service to get good rank by

providing good infrastructure, qualified lecturer and good graduate employability, improve competition rate to enter and get the ideal ratio between lecturers and students. By having good accreditation, the university can have enough capable students each year.

Table 5. Seeking for private universities
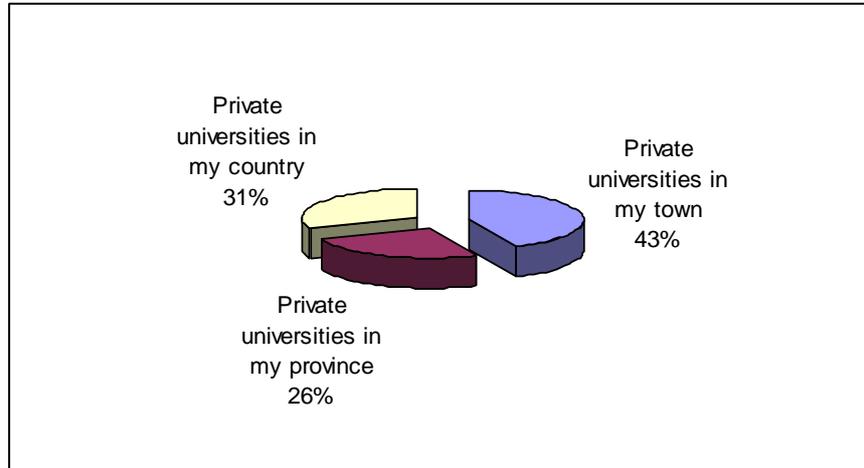
Table 6. Selection criteria
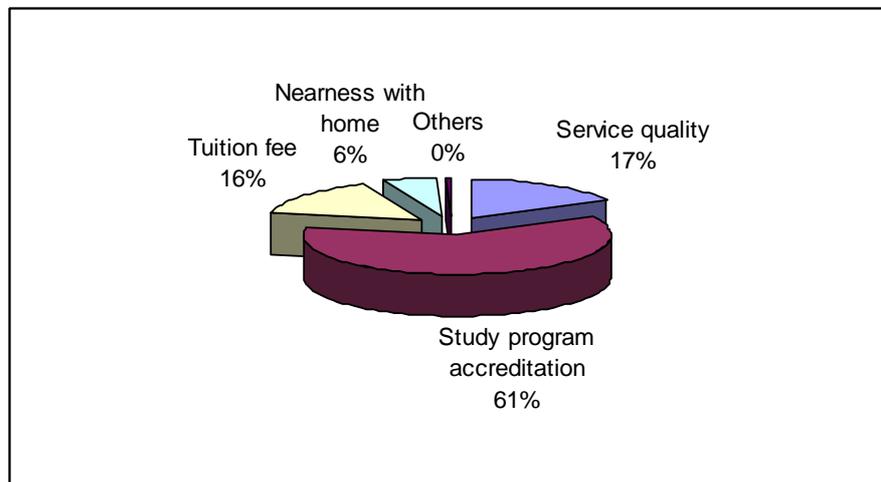
Information searching pattern follows the need of the product. Information searching will be done seriously for high involvement product while low involvement product has low information search intensity. Information can be obtains from personal/impartial and non personal/partial resources. Personal information resource can be friends or relatives while non personal can be advertisement. Based on the reliability of the resource, the

higher the risk the greater the dependability of information searcher toward personal resource, in this case family member or friends even a respectable newspapers come to the second rank after the personal resource. This communication model is called word-of-mouth communication model. This communication is defined as informal communication about ownership, usability or characteristic of product or service, or the characteristics of producers.

Decision Making

Decision making types can be divided into four (Assael, 1998). The first type is decision making which have high involvent and search information and consider several alternatives (called complex decision making). The second type has a high involvent but no or little information information searching and consider one alternative (called loyalty). The third type has a low involvent, search for information and consider several alternatives (called limited decision making). The last type has a low involvent but no or little information searching and consider one alternative (called inertia) .

Table 7 shows respondents decision making pattern. Most of the respondents (62%) perceived that decision to enter higher education institution as complex decision making. Thus, higher education institutions marketer should create many activities to attract market.

Table 7. Decision Making Patterns
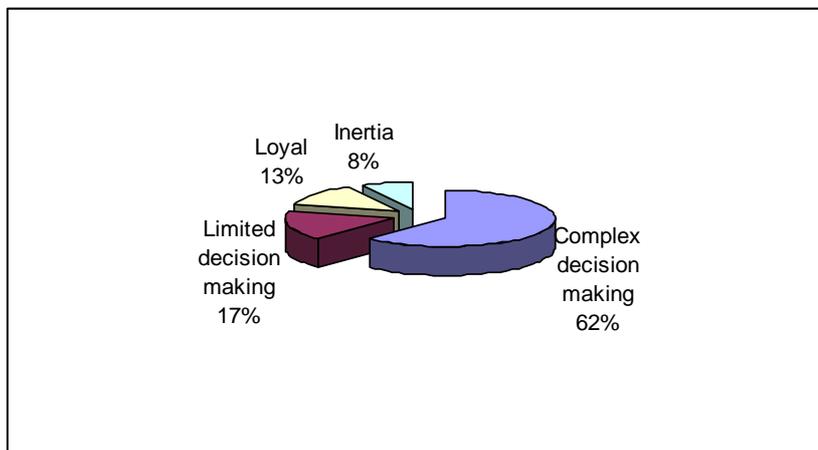
CONCLUSION

Higher education institutions sustainability can be maintained by developing their accreditation study program. Networking with target senior high schools, creating attractive brochures and distributing information around Indonesia are the second step. Because the type of decision making is categorized as complex decision making,

continuous marketing efforts must be done because market search information and evaluate it deeply. Marketers should strategize their higher education institutions to get them into prospect's awareness set, consideration set, and choice set.

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THE DEVELOPMENT OF COLLABORATIVE STRATEGIES IN SOCIAL SCIENCES RESEARCH IN THAI PUBLIC HIGHER EDUCATION INSTITUTIONS

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ABSTRACT

The main purpose of this research is to develop collaborative strategies for Social Sciences research in public higher education institutions. The focuses of this research are on the collaboration both at the intra-nation and international levels among Thai public higher education institutions and (1) Thai/overseas public and private universities, (2) and Thai/oversea government organizations, and (3) private organizations or NGOs. The objectives are: 1) to study the present state and problems of Social Sciences research collaboration, 2) to analyze existing Social Sciences research collaboration, and 3) to develop collaborative strategies in social sciences research.

The research results will be presented in three phases. The first phase is about the present state and problems of R&D in Thailand. The result shows that Thailand rather lacks of cooperation in R&D management systems among universities, government sectors, and private sectors. The diffusion of research system is narrow and not effective. There is a small amount of interdisciplinary research.

The second phase is a study of Social Sciences collaborative research among Thai public higher education institutions and other organizations mentioned above. The research finding shows that the collaborative research type is only at the first stage (of the five collaboration stages): the research networking.

The final phase focuses on strategies enhancing Social Sciences research collaboration among Thai public higher education institutions and other organizations. There are six strategies: Tangible Research Policy, Effective Research Faculty Staff Development, Sufficient Research Allocation, Systematic Research Management, Diffusion of Research Outcomes, and Research and Development/ Research Adoptions.

BACKGROUND AND RESEARCH PROBLEM

The World Competitiveness Scoreboard of International Institute for Management Development (IMD) presents the 2006 overall ranking for the 61 countries and regional economies covered by the World Competitiveness Yearbook (WCY). The economies ranked from the most to the least competitive and performance can be analyzed on the basis of time-series. (http://www.imd.ch/research/publications/wcy/competitiveness_scoreboard_2006.cfm)

From this scoreboard, the competitiveness of Thailand has moved down from the 27th to 32nd in 2006. Regarding the ratio of R&D to GDP of Thailand, it was 0.26%, which was lower than the world standard (0.33%). Moreover, the rate of intellectual property utilization was at the very low level. This information obviously showed that Thailand has given much less importance to R&D comparing to other countries.

The lack of cooperation in R&D management system among universities, government sectors, and private sector in Thailand has been our main problem leaded to the quality lacking in research productivity. (Wicharn Panitch, 2003). Moreover, the information shows the lacks of interdisciplinary research and the cooperation among researches in different areas. Research networking in Thailand is still weak and limited in operational processes and there is no research linkage between the research utilizer and the intra and inter-university network. (Prutya Wesarat, 2003).

In foreign countries, higher education Institutions have implemented various models of collaboration research strategies in order to develop and strengthen their body of knowledge and academic to create distinction and high competency in their R&D productivity. Hence, they have gained more alliances in the same area and discipline. The study of research collaboration in Thailand
noted that the majority of research products were studies of research collaboration in Sciences and Technology and Health Sciences at the national and international level, while there were quite a few research collaboration in Social Sciences. This can be seen from the report of Higher Education Information of Thailand Annual Report in 2003, which showed that the government granted 1,475,811,278 Baht to R&D in Science & Technology and Health Sciences while Social Sciences got only 787,351,075 Baht.

In addition, Prutya Wesarat (2003) has reported that the problems and obstacles of R&D in Thailand founded research outputs in Social Sciences were a few even in reputatable higher education institutions in Thailand such as Chulalongkorn University. Research Affairs of Chulalongkorn University (2006) reported summary of the general of research Outputs in 2005 that the total of 1,033 research reports, the majority of them were Science & Technology and Health Science projects (282 and 262 consequently), while there were only 144 Social Sciences research projects and 17 Humanity Sciences research projects. And there were 645 research articles published in the international journals; 5 of them were Social Sciences research article and 2 of them were Humanity Sciences, while 23 of them were Sciences & Technology research article and 408 of them were Health Sciences research papers (Research Affairs of Chulalongkorn University, 2005).

Consequently, this is the high time that Thailand's public higher education institutions develop appropriate collaborative strategies to develop more research outputs and body of knowledge in Social Science research as the foundation of innovation development in equally to the outputs of research in Science.

This research is purpose to study the collaborative strategies for Social Sciences research in public higher education institutions in order to get the models of research collaboration of public higher education institutions and government, private organizations. It will be the approach to develop research network and get more research alliances. That will

reinforce carrier path of research faculty and staff to construct the good quality of research productive in international level. And it will be the way to exchange innovation and knowledge from research outputs to utilize for sustainable development of Thai social and country.

OBJECTIVES

This research is aimed to study collaborative strategies for Social Sciences research in Thai public higher education institutions. It focuses on the collaboration both at the intra-nation and international levels. The details of objectives are:

1. To study the present state and problems of Social Sciences research collaboration among Thai public higher education institutions and (1) Thai/overseas public and private universities, (2) and Thai/overseas government organizations, and (3) private organizations or NGOs.
2. To analyze existed Social Sciences research collaboration among Thai public higher education institutions and (1) Thai/oversea public and private universities, (2) and Thai/oversea government organizations, and (3) private organizations or NGOs.
3. To develop collaborative strategies of Social Sciences research among Thai public higher education institutions and (1) Thai/oversea public and private universities, (2) and Thai/oversea government organizations, and (3) private organizations or NGOs.

Research Questions

1. What are the present state and obstacles of Social Sciences research collaboration among Thai public higher education institutions and (1) Thai/oversea public and private universities, (2) and Thai/oversea government organizations, and (3) private organizations or NGOs.
2. How many types of Social Sciences research collaboration are among Thai public higher education institutions and (1) Thai/oversea public and private universities, (2) and Thai/oversea government organizations, and (3) private organizations or NGOs.
3. What are the success factors of research collaboration operation?
4. How to develop the collaborative strategies for Social Sciences research in Thai public higher education institutions?

Scope of the research

The focuses of this research are as follows:

1. Detailed study of Social Sciences research collaboration according to disciplines based on International Standard Classification of Education (Unesco, 1997)
2. Population of the study is 24 Thai public higher education institutions that provide humanities and social sciences curriculum excluding Rajabhat University and Rajamagala University of Technology. Because they have just transformed the status from institute to university in 2003.

3. Organizations in focus of this research are public higher education institutions, other higher education institutions in Thailand and oversea, government organizations, and private organizations/ NGOs.

Conceptual Framework

The term "research collaboration" has been defined by many educators so that its definition
is varied according to the different purposes of the usages. Katz and Martin (1997) defined the collaboration means "working together of researchers on research project for the same purpose to create new knowledge in their discipline". The EU responsible partnering had studied the roles of partner in research operating for developing their organization in sciences research and given the definition of research collaboration agreement as the "contract agreement that collaborators agree to set the aims, objectives, and conditions of operation of research projects together" (European Commission, 2005)

Here in this research project, this definition of Social Sciences Research collaboration means "The research operation or activities are involved about Social Sciences discipline; Social and Humanity Sciences; of Thai public higher education institutions that collaborate with 1) Thai/ oversea public and private universities 2) Thai/ oversea government organizations, and 3) private organizations or NGOs. They collaborate in the part of research funding, sharing resources and technology, exchange research information, doing research together and exchange of researchers/ teaching staff and students.

Research collaboration can create in several models. The outstanding model of collaboration is the community linkage model of Hogue (1993). There are five levels of community linkage i.e. networking, cooperation or alliance, coordination or partnership, coalition, and collaboration. The first four levels of these community linkages are the main fundamental leaded to success of full collaboration at fifth level. Effective collaborations are characterized by building and sustaining "win-win-win" relationships and by those who are working with the collaboration. The levels of collaboration differ by purpose, the structure of decision making, and leadership as explained in this following table:

Levels	Purpose	Structure	Process
Networking	• Dialogue and common understanding. • Clearinghouse for information. • Create base of support.	• Non-hierarchical. • Loose/ flexible link. • Roles loosely defined. • Communication is primary link among members.	• Low-key leadership • Minimal decision-making • Little conflict • Informal communication.

Co-operation or Alliance	• Match needs and provide co-ordination. • Limit duplication of services. • Ensure tasks are done.	• Central body of people as communication hub. • Semi-formal links. • Roles somewhat defined. • Links are advisory. • Group leverages/ raises money.	• Facilitative leaders. • Complex decision-making. • Some conflict. • Formal communications within the central group.
Co-ordination or Partnership	• Share resources to address common issues. • Merge resources base to create something new.	• Central body of people consists of decision-makers. • Roles defined. • Links formalized. • Group develops new resources and joint budget.	• Autonomous leadership but focus is on the issue. • Group decision-making in central and subgroups. • Communication is frequent and clear.
Coalition	• Share ideas and be wiling to pull resources from existing systems. • Develop commitment for a minimum of three years.	• All members involved in decision-making. • Roles and time defined. • Links formal with written agreement. • Group develops new resources and joint budget.	• Shared leadership. • Decision making formal with all members. • Communication is common and prioritized.
Collaboration	• Accomplish shared vision and impact benchmarks. • Build interdependent systems to address issues and opportunities.	• Consensus used in shares decision-making. • Roles, time and evaluation formalized. • Links are formal and written in work assignments. • Resources and joint budgets are developed.	• Leadership high, trust level high, productivity high. • Ideas and decisions equally shared. • Highly developed communication system.

Sources: Hogue, T. (1993). *Community based collaboration: Community wellness multiplied.*
Retrieved March 15, 2006. from National Network for Collaboration:
http://crs.uvm.edu/nnco/collab/wellness.html

The Success of collaborative research needs to have many supporting factors appropriate. Mattessich and others (2001) had studied on factors influencing the success of organization collaboration and addressed 20 factors which are classified into 6 categories: purpose, environment, membership characteristics, process and structure, communication, and resources as followed:

1. Environment consists of History of collaboration or cooperation in the community; Collaborative group seen as a legitimate leader in the community; Favorable political and social climate.
2. Membership characteristic consists of Mutual respect, understanding, and trust; Appropriate cross section of members; Members see collaboration as in their self-interest; Ability to compromise.
3. Process and Structure consist of Members share a stake in both process and outcome; Multiple layers of participation; Flexibility; Development of clear roles and policy guidelines; Adaptability; Appropriate pace of development.
4. Resources consist of Sufficient funds, staff, materials, and time; Skilled leadership.
5. Communication: Open and frequent communication; Established informal relationships and communication links.
6. Purpose consists of Concrete, attainable goals and objectives; Shared vision;
   Unique purpose.

The literature of state and problems of research collaboration in public higher education institutions in Thailand showed that high collaborations are in Sciences and low collaborations are in Social Sciences. Though, the latter has high social benefit in terms of problem solving at the operational and policy levels. It also founded that national research network management is quite weak and lacks national research linkage development.

Thus, this research focuses on the development of Social Sciences research collaboration strategy among Thai public universities and (1) Thai/oversea public and private universities, (2) and Thai/oversea government organizations, and (3) private organizations or NGOs. The research methodology is developed based on Hogue (t993) and Mattessich and others.

RESEARCH METHODOLOGY

This research is a descriptive research focusing on a development of collaborative strategies for Social Sciences research in Thai public higher education institutions. There are 5 stages of research processes as follows:

1. To study and analyze research policy and plan of Thailand related to Social Sciences research collaboration in Thai public higher education institutions.

2. To analyze the present state, constraints, collaboration patterns, success factors as well as the development guidelines of social sciences research collaboration in Thai public higher education institutions. By collecting data from 3 Thai public higher education institutions that are 15 units of Chulalongkorn University, 9 units of Khon

Khan University and 7 units of Mae Fah Luang University. The unit of analysis is Social Sciences organizations that consist of faculties, R&D institutions, research units, and research centers. The research instruments used are as followed:

2.1 Questionnaire for surveying Social Sciences research collaboration projects of Thai public higher education institutions. It collects data on current state and constraints. There are 15 units of study within 3 sample universities.

2.2 Questionnaire for research project leaders/ research network leaders. It collects data on research operation and success factors. There are 358 questionnaires.

2.3 Interview for research administrators of 3 sample universities including research administrators in other organizations. There are 53 interviews. It collects data on current state, constraints, and development guidelines of Social Sciences research collaboration.

3. To do SWOT analysis on present state, constraints, collaboration patterns, success factors as well as the development guidelines of Social Sciences research collaboration in Thai public higher education institutions.

4. To organize connoisseur seminar in order to verify patterns and strategy of Social Sciences research collaboration proposed by the researcher

5. To present the development of collaborative strategies for Social Sciences research among of Thai public higher education institutions and other organizations that leads to full research collaboration.

RESEARCH FINDINGS

Due to this research is ongoing, it's now on the fourth stage as mentioned above. Thus, this paper will present only findings founded according to the objective 1 and 2 as collected data from the survey, interview and document review. It will also present draft of Social Sciences research collaboration development of Thai public higher education institutions which is supposed to gain from the study. The findings are summarized into 3 phases detailed following:

Phase 1 Current state and constraints of Social Sciences research collaboration of Thai public education institutions. Based on the review of the national research policy and other related documents, it can be summarized some findings revealed as the objective 1:

1. Current state and national research problems
It founded that national research problems had occurred for a long time.
These can be categorized into 7 problems as followed:

1.1. National research policy: It lacks the integration of research policy and strategy; linkage of all related government bodies; clear policy; effective evaluation. These lead to outcomes that could not be used to develop the country.

1.2. Research expenditures: It founded that budget for research activities is quite lower and not sufficient to buy materials and equipments needed. It is also noted that most of research project are funded by the government sector.

1.3. Research personnel: It lacks research staff both in number and quality.

It revealed that 10,000 researchers are the number lower than target number proposed in The Sixth National Research Policy and Guidelines (2002-2006) (2.87 researchers per 10,000 people).

It shows that Thailand could not have sufficient personnel working for research and development.

1.4. Research administration: It founded that research administration is generally ineffective due to the repetition of research activities and roles of research and support organization. Moreover, there is no cooperation and linkage among policy makers, research funding organizations, researchers, and beneficiary of research outcomes.

1.5. Research organizations: There are many small research organizations in Thailand. It could not link these organizations in terms of active research network. Furthermore, resources of research activities are still limited due to lack channel for exchanging ideas and learning.

1.6. Linkage of research networks: It lacks full national research databases and network linkage closely. There have some constraints of laws and regulations for linking networks. It also founded that research support system is not perfect and is inflexible to link research network.

1.7. Research results dissemination and implementation: Research results are not disseminated to all target users. It lacks active linkage between research organizations and user organizations.

2. Current state and constraints of Social Sciences research collaboration of Thai public education institutions

Based on the data collected by reviewing documents, interviewing, and surveying, it shows present situation of social sciences research collaboration of Thai public education institutions as followed:

2.1. Research collaboration policies: Most of Thai public higher education institutions target to be "Research University". So, they focus to develop their organization according to their competency. However, there is no concrete policy addressed on only research collaboration development for higher education institutions. Research collaboration situation today is still limited and depended on "person".

2.2. Research assessment: Researcher assessment does not support research collaboration. Generally, most of organization do research assessment based much on impact factors as in scientific methods. This does not support and is not relevant to Social Sciences research.

2.3. Research network Linkage: It lacks research databases linking at the national level as well as Public higher education institution level.

2.4. Laws and regulations: There are some laws and regulations that obstruct research network linkage. It affects the researcher incentive and flexibility to do research.

2.5. Research personnel: It founded that most of teaching staff has no incentive to do research. It is lack of research support staff in terms of quantity and English language skill. It is limited international research collaboration.

Phase 2 Patterns of Social Sciences research collaboration of Thai public education institutions. Based on the data analysis of documents, surveying, and

interviewing, it can be summarized some findings into 2 patterns revealed as the objective 2:

Section 1: Research collaboration patterns between Thai public higher education institutions and (1) Thai/oversea public and private universities, (2) and Thai/oversea government organizations, and (3) private organizations or NGOs. Most collaboration is at the first stage that is Research networking. It refers to gather researchers used to do research together both formally and informally; and to form network depending on the purpose of collaboration.

Furthermore, it founded that Research network can be divided into 5 types: 1) Policy Research Network 2) Project-based Research Network 3) Multi-institutions Research Network 4) Community-Based Participatory Research Network and 5) Area-based Research Network.

According to characteristics of the organization, there are 3 levels of collaboration network as followed:

1. Internal research network. There are 2 groups: (1) Informal Network: It is the research cooperation among individual researcher/teaching staff based on personal relationship, and (2) Formal Network: It is a research team emphasized on integrated research.

2. External research network at national level. There are 3 levels:
    2.1. Individual level. It is the collaboration among individual researchers based on personal contact and informal relation.
    2.2. Organization level. It is the formal collaboration of organizations in form of bilateral and multilateral. It needs a formal agreement.
    2.3. National level. There are 2 types of networks: area-based research network and disciplinary research network. They are the formal collaboration established according to public policy with core institute, coordinating and monitoring units.

3. External research network at international level. In general, this type of network is created by individual collaboration among Thai and foreign researchers, later it is developed to institutional collaboration in terms of research funding and conducting research together.

Section 2: Factors influencing the success of collaboration. The research results of this section derived from the questionnaires. It founded that most of influencing factors to research collaboration of Thai public higher education institutions in 6 categories are at the most level as detailed below:
    1. Purpose: Goal and objectives of collaboration and specific objectives of researchers or collaborative organizations
    2. Environment: Reputation, competency, and specialization of collaborative researchers or organizations; and history of collaboration
    3. Membership characteristic: Understanding collaborative objectives, trust, and respect
    4. Process: Research participation and responsibility of collaborative researchers and institutes; as well as roles and responsibility assignment

5. Communication: Meetings, correspondent and sharing among collaborative researchers or institutes; and information dissemination
6. Resources: Sources of research funds; research skill and research project management

Phase 3   Drafted strategy of enhancing Social Sciences research collaboration of Thai public education institutions. Based on the findings in objective 1 and 2, the author proposed a drafted strategy in order to present in the next stage at connoisseur seminar.
It consists of 6 strategies as followed:

1. **Tangible Research Policy**. Thai public higher education institutions should have the policy enhancing research collaboration at the institution level to create research networking in all disciplines; the policy generating effective research databases which link to others; and the policy motivating teaching staff to do collaborative research. In addition, it should improve the research assessment policy of the teaching staff.

2. **Effective Research Faculty and Staff Development**. In order to enhance knowledge sharing of teaching staff in similar disciplines and to develop research network, Thai public higher education institutions should have activities to enhance research skill and to access source of research fund, research paper writing skill.

3. **Sufficient Research Allocation.** In order to provide mutual benefits on collaborative public higher education institutions, researcher database including research database, internal and external research network both in national and international level should be created.
The institute should determine the pattern of collaborative research or resource sharing in kind
and in cash.

4. **Systematic Research Management.** In order to enhance research collaboration and flexibility, Laws and regulations obstructing the collaboration should be solved. They should found research support center and allocate research support staff to facilitate the collaborative research.

5. **Diffusion of Research Outcomes.** To enhance widely utilization of research outcomes, Public higher education institutions should develop many channels to disseminate
research outcomes.

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THE MOTIVE OF HIGHER EDUCATION TO USE WEB AS AN EFFORT TO STRENGTHEN INSTITUTIONAL POSITION AND SUSTAINABILITY

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ABSTRACT

IT/ICT using hopefully can give a great benefit to such a competitive world of education. One of technology implementations in terms of business competition improvement and products selling is to use Web to provide information about a university/higher education institution. The parties who are related to the university such as lecturers, staffs, students, parents of students, alumni, the employee of alumni, and the government will have their roles in the using of informatics technology at university. The objectives of this study are: (1) What motives that encourage a university/higher education institution to use Web for business interest, and (2) What benefits that have already been obtained when a university/higher education institution has used Web already for the sake of educational institution development.

The sample of this research contains of 85 universities. The result shows that, the most ten motives of universities to use web are: to access global information, to promote available facilities and infrastructure, to build the image of university, to provide information for candidate students, to help competing with large universities, to give a positive image to the institution (Higher Education), to help faster communication with the users of information at universities, to facilitate the communication of information users at universities, to be closer to the users of information at universities and to broaden the spread of students. The other finding of the research show that the most three benefit of using Web at universities are: competitive strategy, an easy access to information and the satisfaction of information users at universities (student and their parents).

Keywords: Information Technology, Information Communication Technology, Website, motives and benefits

INTRODUCTION

The rapid development of science and technology to follow the development speed of today's global era demands the emerging of new paradigm of a higher education institution, especially university. The demand of informatics and communication technology utilization, the demand to have value added university product and the demand of university's role to be able to help local, national and international problem now is becoming strong. Therefore, one of the problems of university development today

is how the university is able to optimize its role to answer the aforementioned global problem with the resource it has today.

There are many strategies that can be used to optimize the role of university which one of them is the performance of "University's Resources Revitalization" strategy (Soekartawi, 2005). According to Soekartawi, in order to improve the role of university, the said university does not have to wait for having "sufficient" resources since such a role can also be performed by optimizing the resources revitalization that is available today. This thought is forwarded since there is a management of university's role that is either not or less optimal. Consequently, the competitive superiority of such university is low. One of the solutions thereof is how to perform educational resources revitalization to have a high competitive power (competitiveness).

Such a rapid change is mostly due to the impact of new technology and innovation invention that is called Informatics Technology or Informatics Communication Technology (IT/ICT). Nowadays, any institutions that have not been touched by this kind of technology will be always left behind since the globalization acceleration is continuously improved along with the rapid progress of IT/ICT.

IT/ICT using hopefully can give a great benefit to such a competitive world of education. The university which is competitive in the competition is the one that is able to implement technology in the activity of institutional development. One of technology implementations in terms of business competition improvement and products selling is to use Web to provide information about a university/higher education institution. The parties who are related to the university such as lecturers, staffs, students, parents of students, alumni, the employee of alumni, and the government will have their roles in the using of informatics technology at university.

Internet using has been experiencing a remarkable development in business, especially at large scale companies. Since internet technology firstly invented in 1990s, its using has been spreading for it is considered to give a very great benefit to business processes.

The motive and benefit of Web in order to improve the service to the university information users and the competitive power of university in this matter becomes the writer's point of view to be the object of this study. Referring to such a reality, the application of Web technology is one of important factors to support the success of university to improve its image before the users of educational service.

There are many universities in Indonesia that have been using Web. According to the initial survey, there are many universities in Indonesia that use Web as the facility to spread over information and shape the image of university. Therefore, this study will analyze the motive of and benefit obtained by those universities that have been applying Web for the interest of educational institution. Through this study hopefully there is a clear picture of university's motive in using Web. This finding is very important especially in trying to provide clearer information about the basic consideration of using Web and utilizing it as the facility of competitive superiority. This study uses several universities in Indonesia as its subjects and they are those universities that have already been using Web Service and located in big cities in Indonesia.

The objectives of this study are: (1) What motives that encourage a university/higher education institution to use Web for business interest, and (2) What benefits that have already been obtained when a university/higher education institution has used Web already for the sake of educational institution development.

THEORETICAL BACKGROUND
Previous Study
A study of Web using (e-commerce) intention and its benefit have already been done by Daniel and Wilson (2002). The said study is aimed to analyze the reasons that force a company, especially that small and middle scale company, to use e-commerce for the sake of business and to know about the perception of company about the benefit it has after using e-commerce. The design of study employed by Daniel and Wilson (2002) is a survey study that involves small and middle scale companies in England which employ less than 250 workers and have used e-commerce already for business. By using a factor statistical technique, it is concluded that there are five factors identified to force those small and middle scale companies to use e-commerce. Those five factors are: to improve the efficiency of service, to maintain a good relationship with suppliers, and to attract customers, while the fourth and fifth factors are not given name since the categorization derived from them is not specific. This fourth factor consists of variables to obtain external business information, to recruit staff, and to improve internal knowledge spreading, while the fifth factor is formed by variables of customers' pressure and competitors' pressure. Factor analysis of the benefit obtained after using e-commerce among others are the benefit in terms of customers, for the sake of competition, service efficiency improvement, relationship with suppliers improvement, while the fifth factor is not given name since it is formed by online staff recruitment and internal knowledge spreading improvement.

Another pervious study has also ever been done by Herliansyah (2004) who tested the effect of motivational factors toward the behavioral intention of investors that use go public companies' websites. In the said study, he tried to see the impact of motivational factors on go public companies' websites using in terms of investors' decision making. There are three types of motivational factors that are employed, easy-for-use perception, utility perception, and informative perception of go public companies' websites.

There was also another study done previously by M. Rizal Palil (2004) in order to know about electronic commerce effect toward taxation system in Malaysia that emphasizes on tax imposition and rights to tax. This study performed by M. Rizal Palil employed 82 samples of taxation practitioner and 22 academicians. The result of study showed that tax imposition practice in electronic commerce had not been performed according to the prevailing regulation yet. Therefore, the tax earned form such an electronic commerce was not yet maximal.

This study of e-commerce using was also performed by Setyarini Santosa (2002). It is about the emerging of internet and worldwide web (www) as the base of electronic commerce development that has caused a quite complex problem for an accountant in performing his/her task. In the circle of trading that have already employed a computer

network, both in its capacity as an internet and extranet, the internal control system becomes more complicated. The study then discussed about those materials that are relevant to new issues about internal control, e-commerce implication toward internal control and the opportunity of accountant.

The fifth study was performed by Oviliani Yenti Yuliana (2000) in which she took the using of internet technology in business as the subject matter. This study has proven that go public companies' websites is useful in the process of decision making for investment. In addition, the said study also proved that a potential investor tends to use go public companies' websites for making decision.

The study performed by Luciana Spica and Lidia (2006) analyzed the motive of and benefit obtained by the company that has applied Web (e-commerce) for business. The finding of this study is very important especially in the effort to provide clearer information about the basic consideration in using e-commerce and utilizing it as the facility of competitive superiority. The study performed by Luciana Spica and Lidia (2006) used several companies that have already used e-commerce service as the object, which is directly targeted to the customers. Those companies are located in big cities in Indonesia. The samples are taken from 27 companies of service and trading which turnovers range from 10 million to 100 million. As referred to the analysis and discussion described in previous chapter then the following matters can be concluded: as referred to motive factor descriptive analysis can be concluded that the factors that ground the company to use e-commerce consist of six factors that become the highest hope of the company when it want to apply e-commerce: to access Global market as much as 56%, to be closer to the product as much as 63%, to build trademark as much as 74%, to help faster communication with the customers as much as 63% and to satisfy the customers as much as 56%. And as referred to the second analysis namely benefit factor descriptive analysis obtained by the company by means of e-commerce application consists of two factors which become the biggest benefit of company after applying e-commerce namely Customer Satisfaction as much as 74% and Competitive Superiority as much as 81%.

New Paradigm of University Development
The competitive superiority of university must be improved by revitalizing the resources owned by university. The aim of such revitalization is to enable the university to improve its competitive power as follows:

First, the revitalization is necessary in order to overcome "fund shortage" in education, research, and public service organization. This is especially for state university where part of costs always depends on the fund allocated by the government through APBN and APBD. Second, the revitalization is necessary in order to fulfill "the necessity of employing lecturer and employer". At certain universities, there are often shortages of lecturers and employers, especially when there are many lecturers who work outside their campus. Third, revitalization must be done in order to achieve "resources efficiency", such as: equipments utilization, lecturing room and practicum room utilization, lecturer utilization, collective research utilization, and administrative activity utilization.

The Role of University/Higher Education Institution in the Improvement of National Competitive Power

All activities performed by universities/higher education institution should be subject to the principles of efficiency and prioritize the quality. It is meant that the product of education can survive for such a long time (sustainable) with a reliable quality. The qualified principles of efficiency and management (Enhance Efficiency and Quality Management) is better to be well understood by the director, lecturers, and employees of an institution in order to avoid any misunderstanding about the said qualified principles of efficiency and management.

In this global era as today, it is demanded to be able to create and improve one's network with other parties who share the same vision, mission, and goals in addition to have competence in technology, especially informatics technology and also to be able to anticipate the rapid global change. This networking can be maintained by both domestic and overseas institutions. Team work and mutual cooperation will be useful, for example to create new innovation, to perform the efficiency principles, and so forth. It is very suggested to cooperate with partners both domestics and overseas (SOEKARTAWI, 1999, 2001).

The product and program of university must be widely marketed to be known by its their users. This is important since no matter how good the available product and program are, they will not be popular if they are not widely known by their users. The direct impact is nobody or less people will be interested in that university.
     There are various ways to broaden "the market" of university's program and product namely by utilizing its web to give information to the people about:
1. There are many specific publications published in journals both national scientific and international scientific ones.
2. There are many lecturers who present scientific literature that is presented in various scientific forums, whether in seminars, trainings, visit lecturing or others both national and international.
3. There are other scientific books and writings that are written by the lecturers.
4. There is news about university's activities that are reported by various media both electronic and printing.
5. There are lecturers assigned at various other institutions as outsourced employees.
6. There are many books, scientific journal or other information that are produced.
7. To strengthen the website of university and always renew its content.
8. There are many students who apprentice at another institution outside the university with good achievement.
   The demand of university's role as described aforementioned by Hidayat (2002), it can be understood since the university is a place where people can learn about and obtain and develop knowledge. By having this knowledge, the people can perform a research based on good way of thinking and reasoning.

RESEARCH METHODS
Sample Selection and Data Collection

The population of this study is the universities that have employed the service of Web to introduce them to the public. The participating universities distributed the questionnaires to their administration web that have been managing the university web. The survey got

85 respondent from 85 universities in Indonesia and all of the questionnaires qualified for analysis

Research Variables

The employed variables in this research are
1. The motives of university to use Web are:
    a. To broaden the spread of students
    b. To access global information
    c. To promote available facilities and infrastructures
    d. To build the image of university
    e. To give a positive image to the institution (Higher Education)
    f. To help competing with large universities
    g. To be closer to the users of information at universities
    h. To help faster communication with the users of information at universities
    i. To satisfy the users of information at universities
    j. To provide service at anytime
    k. To help business transaction
    l. To provide information for candidate students
    m. To facilitate the communication of information users at universities
    n. To invite domestic partner to cooperate in the development of university
    o. To invite overseas partner to cooperate in the development of university
    p. To access information from external parties
    q. To save cost
    r. To improve internal communication
    s. To help in the process of recruitment
    t. To save the cost of recruitment
    u. To efficient the operational process of institution
2. The benefit of using Web at Universities:
    a. The improvement of university management internal process
    b. Efficiency and effectiveness in terms of information users at universities
    c. The satisfaction of information users at universities (Students and their parents)
    d. Competitive superiority
    e. Internal communication efficiency
    f. A positive image of university
    g. An easy access to information.

The instrument of evaluation is developed as referred to the instrument developed by Daniel & Wilson (2002) and the research finding of Drew (2003) in a likert scale in which the indicator is developed as referred to the said instrument with the answer of scale from 1 to 5 that is adjusted with the subject of this study namely the University.

Data analysis technique

After the data is collected then data analysis is performed in the following stages: **Descriptive Analysis,** This analysis is performed to search for and draw a conclusion of findings that can be obtained on the field. Those collected findings are further presented in a tabulation or graphic to be easily understood and read. The descriptive analysis is explained in two things:

1. **Descriptive Analysis for Motive Factor.** This descriptive analysis for motive factor will be concluded in 10 answers that are mostly chosen by the respondents, and those 5 answers mostly chosen by the respondents will be drawn as the conclusion that those motives are the reasons of the companies to apply e-commerce in order to improve their business competitive power. Those 10 most chosen answers will be presented in a percentage shown in tabulation or graphic on which those 10 most chosen answers drawn as conclusion are those that range from scale 4 to 5 which percentage is greater than 50%.
2. **Descriptive Analysis for Benefit Factor.** This descriptive analysis for benefit factor will be concluded in 3 answers mostly chosen by the respondents, and those 3 answers mostly chosen by the respondents will be drawn as the conclusion that those benefits are the benefits obtained by the companies when they apply e-commerce for business. Those 3 most chosen answers drawn as conclusion are those that range from scale 4 to 5 which percentage is greater than 50%.

RESULTS
Descriptive Statistics
The sample used in this study shows that 25 universities (29.4%) have students those only come from Java, 18 universities (21.2%) have students those only come from outside Java, 13 universities (15.3%) have students those come from Java and outside Java, and 29 universities (43.1%) have students those come from all over Indonesia and overseas too.

The sample of this study shows that in 1996 there was only 1 university that uses website or as much as 1.2%, in 2000 there were 4 universities or as much as 4.7%, in 2001 there were 2 more universities or as much as 2.4%, in 2002 there were 8 universities or as much as 9.4%, in 2003 there were 9 universities or as much as 10.6%, in 2004 there were 14 universities or as much as 16.5% that started to use web, in 2005 there were 23 universities or as much as 27.1%, and 10 universities or as much as 11.8% started to use web in 2006. The rest of them as many as 14 universities (16.5%) does not mention when starting to use web.

The sample of this study shows that there were 83 universities (97.6%) display university's vision, mission and goals in a university's web. The other information displayed in University's Web about information of activities documentary at the gallery, information works collection, job vacancy information and scholarship for students. Table 1 shows the other information displayed in a university's web.

Internet using for institutional management at universities based on several reasons, such as there were 40 universities (47.1%) using web because all competitor universities have already used it, there were 40 universities (47.1%) using web because most of them have used it, and there were 5 universities (5.9%) using web because few of them have used it. The resources that must be prepared by a university when it going to apply web, are technician, operator, network and management support to the implementation of web using for institution. Table 2 shows descriptive statistic for the resource of university to apply Web.

Table 1.
Descriptive Statistics for Information Displayed in a University's Web

No.	Information Displayed in a University's Web	Total	Percentage (%)
1.	University's vision, mission, and goals	83	97.60
2.	The vision, mission, and goals of each department there	75	88.20
3.	The guidelines of educational organization in each department	56	65.90
4.	The curriculum of each department	45	52.90
5.	Academic administration guidelines of each department	35	41.20
6.	Financial administration guidelines of each department	28	32.90
7.	Student affairs administration guidelines of each department	34	40.00
8.	Library service at the university	58	68.20
9.	The information of facility provided by the university	80	94.10
10.	The information of both academic and non-academic activities in the university	72	84.70
11.	The information of any cooperation entered into by the university with a domestic organization	56	65.90
12.	The information of any cooperation entered into by the university with an overseas organizations	61	71.80
13.	The academic calendar of university	74	87.10
14.	Information of on-line registration	73	85.90

Table 2.
Descriptive Statistics for The Resources of University to Apply Web

No.	The Resource of University to Apply Web	Total	Percentage (%)
1.	Technician	3	3.5
2.	Operator	8	9.4
3.	Network	22	25.9
4.	Technician, Operator and Network	40	47.1
5.	Technician and Operator	1	1.2
6.	Technician and Network	5	5.9
7.	Operator and Network	6	7.1

The obstacles or difficulties faced by the university during the application of web are: lack of human resources in technology, licensing, hosting capacity, server, web designer, database, internet network, and high cost hosting. The benefits obtained by a university when applying web are wide coverage of students, to introduce the university to the public better, strengthen its position, improve its competitive power and to get new business partners.

The cost incurred by the application of web for institutional benefit is about 5,000,000 IDR per month averagely which the lowest is 500,000 IDR per month and the highest is 5,500,000 IDR per month. From respondent survey it is shown that almost all respondents state that the cost spent by the institution is equal to the benefit they will have when using web.

The Motives and benefit of using Web at Universities
The most three benefit of using Web at universities are: competitive superiority, an easy access to information and the satisfaction of information users at universities (student and their parents). Table 3 shows descriptive statistics for the benefit of using Web at universities.

Table 3.
Descriptive Statistics for The Benefit of Using Web at Universities

No.	The Benefit of Using Web at Universities	Percentage (%)
1.	Competitive superiority	84.7
2.	An easy access to information	84.7
3.	The satisfaction of information users at universities (student and their parents)	83.5
4.	Efficiency and effectiveness in terms of information users at universities	74.1
5.	A positive image of university	74.1
6.	Internal communication efficiency	64.7
7.	The improvement of university management internal process	41.1

The most ten motives of universities to use web are: to access global information, to promote available facilities and infrastructure, to build the image of university, to provide information for candidate students, to help competing with large universities, to give a positive image to the institution (Higher Education), to help faster communication with the users of information at universities, to facilitate the communication of information users at universities, to be closer to the users of information at universities and to broaden the spread of students. Table 4 shows descriptive statistics for the motives of university to use web.

Table 4.
Descriptive Statistics for The Motives of University to Use Web

No.	The Motives of University to Use Web	Percentage (%)
1.	To access global information	87.1
2.	To promote available facilities and infrastructure	87.1
3.	To build the image of university	85.8
4.	To provide information for candidate students	85.8
5.	To help competing with large universities.	81.2
6.	To give a positive image to the institution (Higher Education)	80.0
7.	To help faster communication with the users of information at universities	77.7
8.	To facilitate the communication of information users at	76.5

	universities	
9.	To be closer to the users of information at universities	72.9
10.	To broaden the spread of students	71.8
11.	To Invite overseas partner to cooperate in the development of university	71.7
12.	To satisfy the users of information at universities	68.3
13.	To provide service at anytime	68.2
14.	To help competing with small universities	63.6
15.	To invite domestic partner to cooperate in the development of university.	61.2
16.	To access information from external parties	60.0
17.	To efficient the operational process of institution	54.1
18.	To help business transaction	50.6
19.	To improve internal communication	43.5
20.	To save cost	31.8
21.	To help in the process of recruitment	29.4
22.	To save the cost of recruitment	28.2

CONCLUSIONS AND RECOMENDATION

The objectives of this study are: (1) What motives that encourage a university/higher education institution to use Web for business interest, and (2) What benefits that have already been obtained when a university/higher education institution has used Web already for the sake of educational institution development. The sample of this research contains of 85 universities. The result shows that, the most ten motives of universities to use web are: to access global information, to promote available facilities and infrastructure, to build the image of university, to provide information for candidate students, to help competing with large universities, to give a positive image to the institution (Higher Education), to help faster communication with the users of information at universities, to facilitate the communication of information users at universities, to be closer to the users of information at universities and to broaden the spread of students. The other finding of the research show that the most three benefit of using Web at universities are: competitive strategy, an easy access to information and the satisfaction of information users at universities (student and their parents).

The results of the study suggest several directions for further research. Future studies may also investigates a relationship between size of university (proxy by students amount or the other variables) with the motivation and benefit of university using web. The other future studies may also investigates a relationship between the cost spent amount with the motivation and benefit of university using web.

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A DEVELOPMENT OF A MODEL AND MECHANISMS OF THE DUAL BACHELOR'S DEGREE PROGRAM OF HIGHER EDUCATION INSTITUTIONS UNDER THE MINISTRY OF PUBLIC HEALTH

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ABSTRACT

The change of the Health Service System and knowledge management is being broadened, at the same time, the social demand is changing in quality of health service and new health service characteristic comply go along with the new sickness, (Nittayarumpong, 2004). Nowadays, the Health Service System is mostly changing especially in the health data from the National Health Act B.E.2550 (In process). According to Section 87, the knowledge and health information should be promoted and developed for the important factor of National Health System and enable people to access knowledge and use health information by themselves. This situation is consistent with the National Insurance of Health Act B.E. 2545. Also, according to Section 45, the standard of every unit in hospital must conveniently and continuously provide the information within the hospital database when the patients and relatives are treated. In term of Health System, it is clear that the potential of health graduates is not up to its efficiency in many areas such as the information management which is still not met by the hospital in Primary Care, Health Care Centre or Health Stations. As a result, it is reasonable to have a study concerning manpower in health care and health database management.

Nursing Programs in Thailand must provide more potential personnel in health care than before and also the development of International Nursing Program. That is develop special curriculum under standardization to be consistent with the research of Wiracchai (2003) who conducted the need assessment of nurses in Thailand. The study reflects the lack of nurses, the potential nurses, the need of nurses in the future and the development of International Nurse Program. Because of the decentralization and reform structure of the Ministry Public Health, there is a reconstruction of the hospitals under the Ministry of Public Health. Therefore, the hospital directors should revise the internal structures by setting up the authority of nurse. It directly affects the quality and management such as the chief nurses of the hospital can provide the health care information to the hospital administrators. Moreover, they will be able to study, analyze and search for evidenced based information in order to develop their responsibilities at the time of E-government Policy and the policy to increase potential and competition in service. The data and information of health care are the very essential part in hospital. They are used in order to take care of the patients through for various purposes: promotion, prevention, caring and rehabilitation.

The Ministry of Public Health, now a day, takes its responsibility in many educational programs. Two of these programs which can be reorganized as mentioned before are Bachelor's Degree in Nursing and Diploma Degree Program in Health Information Technology. As far as this consideration of two health programs are concerned, it can be provide the perfect nurses in terms of competency and efficiency. The researcher

considers the new program of Dual Bachelor's Degree Program in Nursing and Health Information Technology which are the progressive programs should be the efficiently integration of learning and instruction.

OBJECTIVES
      1. To analyze health manpower in nursing and health information technology

      2. To develop the model suitable for the Dual Bachelor's Degree Program in Nursing and Health Information Technology

      3. To introduce the mechanisms suitable for the Dual Bachelor's Degree Program in Nursing and Health Information Technology

SCOPE OF THE STUDY
According to the objectives, the research is designed to study the model and mechanisms of the dual bachelor's degree program of Higher Education Institutions under the Ministry of Public Health. This research emphasizes two programs: Bachelor of Nurse and Bachelor of Health Information Technology.

Conceptual Framework of the Study
      The conceptual framework of this research encompasses a total of seven concepts and is based primarily on the concept of health manpower requirement of High Potential Nursing and Health Information Technology Personnel Development Plan under the Ninth Health Development Plan (2002-2006), and, on the findings of GIS's survey on allied health personnel's need of further education during the period of ten years from 2004 to 2012 (Bereau of Policy and Strategy, Praboromrajchanok Institute of Health Manpower Development, 2003), taking into account the present requirement of nursing and health information technology personnel requirement and the likely future requirement. They key concept involved with course management is bachelor's degree education management which is essentially the adult education concept of Boshier (Boshier, 1971) and the adult learning concept of Jarvis (Jarvis, 1993) and Knowles (Knowles, 1975). It is also related to specific education management covered by Section 21 of National Education Act B.E. 2542, Sections 21, and 25 Paragraph 2 of Ministry of Public Health Personnel Development Act, Office of National Education Commission and Ministry of Public Health Diploma Program.

      A dual bachelor's degree program combines the curriculum development concept of Tyler (Tyler, 1949) and the SPICE Model medical curriculum development concept of Harden (Harden, 1984) with the dual program concept, offering learners the possibility of receiving two degrees and aims to maximize the potential of learners (Block, 2000). For the development of a Dual Program in Nursing and Health Information Technology, a study was conducted of relevant courses in Thailand and other countries in order to develop a model in accordance with the concept of Steiner and Keeves (Steiner, 1990: Keeves, 1988) using the modified Delphi Technique. The resulting Dual Bachelor's Degree program in Nursing and Health Information Technology is then used to draw a scenario for the management of the said program. Subsequently, the particulars of program management are identified using the Future wheels (Jerome, 1994) in accordance with the course management mechanism: policy, education quality, resource allocation and professional standardization. This research clearly explains, in the scenario descriptive summary, the model and the mechanism for the management of a Dual Bachelor's Degree Program in Nursing and Health Information Technology.

STUDY DESIGN AND METHODOLOGY

The study is a descriptive research as stated in the following steps:

      Step 1 To analyze need assessment and demanded of manpower in nursing

and health information technology. The process includes (1) document analysis from variety of sources such as the annual and conference reports, strategic planning report of Praboromrajchanok Institute of Health Manpower Development in 2006-2010, etc. and (2) the survey are 2 Groups: Group 1, 83 public and private hospital directors in Bangkok and 19 other regional districts, randomly selected from a population of 560 using Yamane table (Yamane,1973: 125) with 90% confidence and permitted deviation of 10%; Group 2: 96 health professionals working at hospitals in Bangkok and 19 other regional districts, randomly selected from a population of 2,200 using Yamane table (Yamane,1973: 125) with 90% confidence and permitted deviation of 10%.

      Step 2 To analyze the selected programs of the Dual Bachelor's Degree Program in Nursing and Health Information Technology in foreign countries. This step includes the analysis of many programs related to nursing, health information and information technology in Thailand.

      Step 3 To develop a model for the Dual Bachelor's Degree Program in Nursing and Health Information Technology

      Information obtained from Step 1 is jointly synthesized with that from Step 2 into a trend of model for a dual bachelor's degree program. It collects opinions of qualified individuals using the modified Delphi Technique in three rounds as follows:

      Round 1: Interview: Ten purposively sampled qualified Ministry of Public Health policy and planning executives were asked to brainstorm on a model for a Dual Bachelor's Degree Program in Nursing and Health Information Technology. The information obtained from the interviews with these qualified individuals was analytically summarized and used for the development of a Delphi questionnaire used in Round 2.

      Round 2: Questionnaire: The opinions of qualified individuals in Round 1 were used to develop a questionnaire to evaluate the probably trend of a model for a Dual Bachelor's Degree Program in Nursing and Health Information Technology. The questionnaire was used with 20 specialists who are executives of governmental departments and of colleges, academicians responsible for the development of nursing and health information technology personnel, and, professional nurses.

      Information from the interviews in Round 1 was used to develop this questionnaire using the Likert type rating scale. Responses from the specialists in Round 2 were analyzed for mean and interquartile range, and, used to develop a questionnaire for Round 3.

      Round 3: Questionnaire: The questionnaire developed for this round was used to determine relevancy of information. It was distributed to the same 20 specialists in Round 2 in order for them to confirm their responses. The responses obtained in Round 3 were analyzed for mean, mode, difference between mean and mode, and, interquartile range.

      Step 4 To draft the model of the Dual Bachelor's Degree program in Nursing and Health Information Technology. The model components are included (1) Rationale of the Dual Degree Program of Nurse and Health Information Technology, (2) Program

objectives, (3) Curriculum structure, (4) Student outcome characteristics, (5) Instruction and evaluation, (6) Criteria for graduation.

Step 5 To confirm the model of the Dual Bachelor's Degree Program in Nursing and Health Information Technology by using focus group connoisseurship. The focus group is the selected 8 specialists in policy and planning, health education management and curriculum.

Step 6 To introduce the mechanisms management of the Dual Bachelor's Degree Program in Nursing and Health Information Technology.

The data from the third round modified Delphi Technique and the result of connoisseurship are analyzed and presenting by using the Future Wheels as the scenarios of suggested mechanisms for managing the model of the dual program.

CONCLUSION AND SUGGESTION

The research findings are as follows:

1. Need assessment analysis of manpower in nursing and health information technology, according to the survey from hospital directors and health professionals in Thailand is very high about 91.6 to 97.9 percent, respectively. They need manpower in health information technology and hospital personnel work effectively in administration, planning and development.

2. The proposed model of Dual Bachelor's Degree Program in Nursing and Health Information Technology derived from content analysis and the survey are designed as the two programs of Bachelor of Sciences in Nursing and Bachelor of Sciences in Health Information Technology. The two programs are integrated and sharing the common components.

2.1. There are 2 types of curriculum management. The first one is a four and a half-year educational management (40 percent of agreement) and the other is a five-to-six-year educational management (50 percent of agreement). So the five year degree program is selected as the Dual Bachelor's Degree Program with total credits not less than 160 and not more than 10 years for full-time study, and not more than 15 years for part-time study.

2.2. Student outcome of the program, according to the survey, the desirable competencies of the Dual Bachelor's Degree Program in Nursing and Health Information Technology is composed of eight competencies as follows:

Competency 1: Knowledge of information technology
Competency 2: Nursing knowledge
Competency 3: Knowledge of organization management
Competency 4: Managerial skills in health information technology
Competency 5: Nursing skills
Competency 6: Ability in organization management
Competency 7: Communication skills
Competency 8: Positive attitude towards profession, legal and ethics

2.3 The curriculum structure is composed of 160 total credits which is 37 credits of General education, 119 credits of Professional education (44 credits in professional foundation and 75 credits in concentration areas) and free elective courses not less than 6 credits. The finding includes suggested courses of the curriculum.

2.4. The category of student admission is as follows:

(1) Students who finished high school level and passing the university entrance examination or high school students who passed the examination directed by higher education institutions under the ministry of Public Health

(2). Nurses who finished a two-year nursing study and having work experience at least one year.

2.5. Graduation and commencement after completing the program, students will be conferred dual bachelor's degrees which includes a Bachelor of Sciences in Nursing and the Bachelor of Sciences in Health Information Technology. In case they cannot complete these two degrees, they can choose either nursing or health information technology degree.

2.6 The instruction emphasizes in integration in teaching and the requirement of one semester of professional training in both degrees.

3. For the presentation of a mechanism for the management of a Dual Bachelor's Degree Program in Nursing and Health Information Technology, the findings obtained from the last round using the modified Delphi technique and the findings from the focus group were collectively summarized into a scenario of model for a dual bachelor's degree program, detailing philosophy, objectives, structure, instruction and management of the program. A Future Wheel was then developed on the basis of assumptions to present a mechanism for the management of a dual bachelor's degree program with regard to policy, education quality, resource allocation and professional standardization. The process can be explained as follows:

(1) A basic wheel was developed with the trend of management of a dual bachelor's degree program as the central trend. The four areas identified are policy, education quality, resource allocation and education standard

(2) About three consequence trends were identified for each area. These provide guidelines for the management of a dual bachelor's degree program in the respective areas

(3) Consequence trends from the Future Wheels were scrutinized for suitability and possibility by a focus group of eight qualified individuals (Wongwanich, 2005: 252) in order to arrive at conclusions for the mechanism for the management of the program in all four areas

(4) A descriptive summary was written from each area in the scenario. Each explains the trends or the developmental guidelines for the management of the program in the respective areas and covers all relevant elements of the program. The diagrams are as follows:
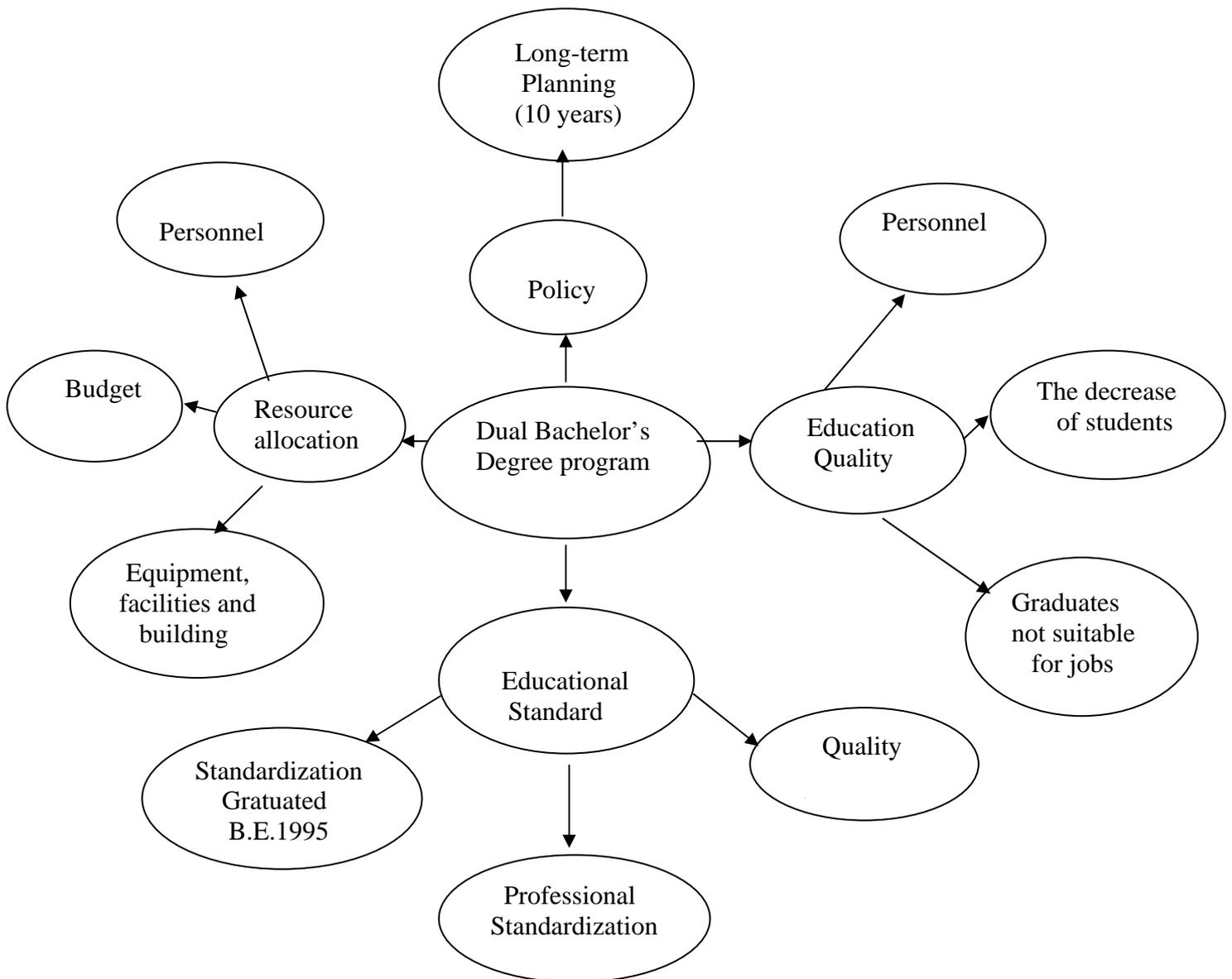
Figure 1: Future Wheels Diagram of Dual Bachelor's Degree Program management in Nursing Program and Health Information Technology Program

Suggestions are as follows:

1. According to the research of Dual Bachelor's Degree Program in Nursing and Health Information Technology, the students who are capable of studying both programs, they have to study harder than those of the single program. So both of the curriculum committees should design the content blocks integrated between disciplines of nursing and health information technology, as well as setting priority and continuation of the program.

2. A development of model and mechanisms of the Dual Bachelor's Degree Program in the resource allocation should be concern of the budget of the curriculum management, personnel and facilities. Dual Bachelor's Degree Program should emphasize in the practicality of both clinic and field studies.

3. The suggested mechanism management should be organized in detail so that their processes can bring about the thorough actions

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A STUDY OF THE EVOLUTION IN HIGHER EDUCATION COOPERATION BETWEEN THE FEDERAL REPUBLIC OF GERMANY AND THE KINGDOM OF THAILAND

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ABSTRACT

The aim of this study is to examine the evolution in higher education cooperation between the Federal Republic of Germany and the Kingdom of Thailand. It used historical research methodology to conduct documentary content analysis of primary and secondary source documents concerning higher education in Germany and in Thailand. This study focuses on four eras of the cooperation. The 1st Era: Beginning of Cooperation (1862-1916) (B.E. 2405-2459) examines the relationship between the two governments and that between the people of the two countries. The 2nd Era: World Wars (1917-1945) (B.E. 2460-2488) examines how the two world wars affected those who were studying in Germany during the wars. The 3rd Era: Restoration and Development (1946-1976) (B.E. 2489-2519) examines the cooperation between the two countries after World War II once agreements were signed by both governments. The 4th Era: Progression of Higher Education (1977-present (2006)) (B.E. 2520-present (B.E. 2549)) examines the benefits brought to the development of the country by a number of economic, technical and cultural agreements executed by the governments of Thailand and Germany.

Some of the key findings of this study are as follows: In the 1st Era, King Rama V sent his sons and some Thai students to Germany to study in German military schools. They helped with the improvement of Thai military schools and the armed forces upon their return. In the 2nd Era, the Kingdom of Siam joined the allies so her amity with Germany was temporarily suspended. The Thai-German commerce and the study of German technologies resumed after the wars. In the 3rd Era, the Thai-Germany amity was officially restored with the mutual assistance treaties and the establishment of Thai-German Technical School, presently known as King Mongkut's Institute of Technology North Bangkok. In the 4th Era, governmental agencies and the private sector engage in investment-related cooperation. DAAD, Goethe Institute and several German foundations offer Thailand assistance in the form of scholarships, German classes, seminars, teaching materials and career development programs.

INTRODUCTION

The world has seen significant developments in all areas in the past two centuries. Many Southeast Asian countries helplessly became victims of colonization by western countries. The Kingdom of Thailand is virtually the only country to have escaped that fate although it had to sacrifice certain districts to the great powers, particularly France. King Rama IV and King Rama V of Thailand realized early on that a diplomatic relationship with Prussia or the Federal Republic of Germany as it is known presently

would protect Thailand from invasion by other powerful nations. Given the circumstances, it was necessary for Thailand to seek from Germany assistance on fortification of national defense and development of the country to keep up with the paces of other civilized countries. With regard to education development, King Rama V (King Chulalongkorn) graciously established Chulalongkorn University as the first university of Thailand and other professional institutions includnig Army Cadet School. Formerly known as The Royal Pages School, Chulalongkorn University was overseen by a group of personnel directly appointed for the task, complete with other factors of a modern schooling system such as separated buildings, curricula, scheduling, evaluation methods and professional teachers. King Rama VI (King Vajiravudh) declared the Royal Pages School an institution of higher education and gave it the name of "Civil Service College of King Chulalongkorn". The college was eventually proclaimed by King Vajiravudh as Chulalongkorn University in honour of King Chulalongkorn on March 26th, 1933 (B.E. 2476). Chulalongkorn University is Thailand's first university, followed by Thammasat and Politics University and others. Chulalongkorn University originally featured four faculties: Political Science, Medicine, Engineering, and, School of Art and Sciences. Thammasat and Politics University, on the other hand, concentrated on politics, economics and administration. Foreign educational assistance came through after the world wars at which time Thailand engaged in systematic national education planning in order to enhance the country's human resources.

The higher education cooperation between the Federal Republic of Germany and the Kingdom of Thailand is considerably well documented. On February 7th, 1862, in the reign of King Rama IV, the German government engaged in a trading and maritime treaty with the King of Siam. That exact day marked the beginning of a historic relationship between the two countries. Germany and Thailand were well aware of the fact that they needed to depend more on each other in this evolving world. That is, they should extend assistance in different areas to each other to help resolve issues and to bring peace and security to their countrymen. One of the earliest assistance Germany offered Thailand was higher education cooperation under which Germany helped Thailand to develop courses and granted Thai students scholarships for further education in the fields Germany was known for:

Military: The German armed forces were known before the world wars to be very formidable. Thailand sent military officers and students to Germany in order to study how the Thai military school and armed forces could be improved.

Medicine: German doctors specialize in several fields and are engaged in the researches to develop treatments for illnesses and better public health systems, with several Nobel prizes awarded to their countrymen. Thailand needed to send doctors to Germany in order to learn how the diseases found in the eastern world could be cured.

Engineering: Germany is exceptionally progressive in terms of techniques, equipments and materials. Thailand wanted to have engineers educated and trained in Germany in order to bring technological advances in Thailand.

Language and literature: German is an attractive choice of second language other than English and French. Intellectually, it gives hints of the German philosophy and rationalism. Practically, it helps students learn the German sciences more easily. Professors, researchers and students with excellent grades were sent to study in Germany so that they would have the proficiency required to help with academic and research efforts in Thailand.

Thailand is a small and developing country. It requires assistance and advices of the country in which the language and the sciences originated in order to improve teaching, researches and techniques in the areas concerned. Thai higher education institutions, universities and research institutions are in need of lecturers, contents, funding, equipments and textbooks with which to achieve academic advances in the fields of military, medicine, public health, engineering, technology and language. Most importantly, Thai universities and higher education institutions are presently in need of a model for research university. The Thai-German Technical School established in Bangkok or King Mongkut's Institute of Technology North Bangkok as it is known today, with campuses in the provinces, offers program in engineering up to the doctoral level. It is a fine example of how the cooperation between the Federal Republic of Germany and the Kingdom of Thailand benefits the Thai higher education circle.

As far as I am concerned, no one has previously studied the evolution in higher education cooperation, particularly that between Germany and Thailand. Germany is a unique collection of thinkers, researchers and developers. Their researches are remarkably successful and their sciences have progressed to a truly impressive level. I am of the opinion that a study of evolution in higher education cooperation between the two countries would be highly beneficial to Thailand's higher education circle as it would offer relevant ideas and philosophies.

PURPOSE OF THE STUDY

The purpose of this study is to analyze the evolution of higher education cooperation between The Federal Republic of Germany and The Kingdom of Thailand from the reign of King Rama IV (1862 or B.E. 2405) to the present reign of King Rama IX (2006 or B.E. 2549).

Expected Benefits of the study

1. Being able to identify more details on higher education cooperation between Germany and Thailand by systematically compiling relevant information
2. Being able to obtain overviews of German–Thai relationship in areas other than higher education
3. Being able to foster a closer relationship with German agencies to seek more assistance for Thai universities in the future
4. Being able to help relevant individuals and agencies in the effort to improve higher education using past examples as guidelines
This study examines the cooperation among the governmental agencies and private organizations or foundations with respect to their activities, budgets, instruments, scholarships, university researches, specialists and lecturers, as well as educational backgrounds, cooperation-related missions, teaching methods researches academic services and cultural exchange programs.

STUDY SCOPE

This study is restricted to the following texts:

- Documents concerning higher education cooperation between Germany and Thailand from 1862 (B.E. 2405) to present
- Primary sources such as royal writing, royal memoires, directives, royal speeches, laws, letters, government memos, newspapers, royal gazettes, treaties, and, agreements between German and Thai agencies
- Secondary sources such as archives, legal annuals, reports, researches, theses, commentaries and other printed matters

It divides the higher education cooperation between Germany and Thailnd into four eras:
- The 1st Era : Beginning of Cooperation (1862-1916) (B.E.2405-2459)
- The 2nd Era: World Wars (1917-1945) (B.E.2460-2488)
- The 3rd Era: Restoration and Development (1964-1976) (B.E.2489-2519)
- The 4th Era: Progression of Higher Education (1977-2006- present) (B.E.2520-2549 -present)

RESEARCH METHODOLOGY

1. Historical research methodology is used to conduct documentary content analysis of primary and secondary source documents concerning higher education as described in the study scope.
2. Interviews are carried out and questionnaires were used with individuals who are or were involved with higher education institutions such as former and current executives and lecturers to gain insights as to the cooperation in question.
3. Information obtained is analyzed by the eras described in order to arrive at findings of the study.

FINDINGS

The study of evolution in higher education cooperation between the Federal Republic of Germany and the Kingdom of Thailand is presently ongoing.

An interesting trend I have observed in German higher education instruction and courses is that most university and higher education institution lecturers are more concerned about seminars than lectures. Students are generally required to submit three papers initially for each seminar, conduct a presentation to the class as well as a relevant discussion participated by members of the class before eventually submitting three final papers. The professors would issue scheins or certificate without the need for a board review. A thesis is required for completion of a diploma (equivalent to master's degree) or a doctoral degree program. This is a very important research element and the adviser would closely supervise the students throughout the stages. Students do not graduate at the same time. With an abitur or high school certificate from a gymnasium school, students sit for an entrance examination into the university, spend a minimum of three years learning the foundation and engage in seminars. They would subsequently spend two to three or more years completing a thesis at the discretion of the professor supervising the thesis before finishing with a doctoral degree in medicine, engineering or German language and literature –the most popular fields among Thai students. Thai students on scholarships of Thai government or German agencies would be governed by the universities and the professors after the fashion of German higher education.

1st Era: Beginning of Cooperation (1862-1916) (B.E. 2405-2459)

The area of greatest interest during this time was military higher education. Faced by the demands and the threats of invasion from the great powers, King Rama V made a strategic move by sending three sons to study military education in Germany because of the facts that they were known to be the best in that area and that they have a diplomatic relationship with Thailand (Ratrie Wanichalaksa : 1976: 40-47). The first son King Rama V sent at his own expense was Prince Boripatra who was enrolled at Gross litchtfeld in Potsdam. The Kaiser or Emperor Wilhelm II graciously assigned the Commander in Chief of the Army to prepare courses for the prince and to be a mentor as Prince Boripatra was of a royal descent. The prince spent a total of nine years with the study and the training then served in the German armed forces in accordance with their military tradition. No evidence is found of a thesis or a research paper for a completion of military higher education in that time. A number of sons of senior government officials were sent to study military and other sciences in Germany with Thai scholarships and subsequently assumed key military and other posts upon their return to Thailand. Among these students was Prince Mahidol (Songkhla), the father of King Rama IX (King Chulalongkorn, Klaiban : 1970:337-338).

2nd Era: World Wars (1917-1945) (B.E.2460-2488)

Germany was engaged in both world wars: World War I from 1914 to 1918 (B.E. 2457-2461) and World War II from 1939 to 1945 (B.E. 2482-2488). There was a window of only 20 years for peace in between the two world wars from 1919 to 1936. As Germany was on the opposing side in the war, it was not convenient for Thais to study there and those who were studying in Germany at that time were summoned back.

During the peaceful time of 1920, Faculty of Arts and Science, Chulalongkorn University, implemented a German course with Praya Montri Pochanakij and Dr. Phil Klaus Wagner as instructors (Chulalongkorn University, Faculty of Arts, Festschrift 1967).

3rd Era: Restoration and Development (1946-1976) (B.E. 2489-2519)

Thai medicine students with good academic achievement were sent to study in Germany with the scholarships of the Thai government and those of German agencies including Alexander Von Humboldt foundation and DAAD (German Academic Exchange Service). These students returned with doctoral degrees and contributed greatly to the development of Thai medicine and public health. Dr. Ouy Ketusing who wrote a 55-page thesis in English titled Dr. Med at Faculty of Medicine, Chulalongkorn University in 1935, for instance, was granted an Alexander von Humboldt scholarship in 1936 for further education in tropical diseases. He was supervised by two to four German professors and graduated with a doctoral degree in organic chemistry from Hamburg University with "excellent" honour for his German thesis titled Das Phlein. This was possible as students had to study German with German professors at Thai-German Association before leaving. It also indicates that Thai students completing theses in Thai or English while in Thailand had to write theses in German when studying in German. Medical students had to spend a minimum of three years studying medicine at a German university before returning to Thailand and making advances in tropical medicine (Ouy Ketusing : 1968)

A number of professors from Faculty of Engineering, Chulalongkorn University, completed their doctoral degree in Germany in order to improve instructions at their institution. The year 1959 was most notable as Germany granted Thailand assistance on

the establishment of Thai-German Technical School (North Bangkok) with funding, lecturers, curricula, equipments, textbooks and other necessities. Germany was actively involved with instructions in the beginning and German courses were offered. The school played an instrumental role in the development of high potential engineers to serve the country's needs. It was later upgraded to King Mongkut's Institute of Technology North Bangkok in 2004.

With regard to language, culture and literature, DAAD dispatched two German lecturers at a time to Faculty of Arts, Chulalongkorn University, to help with instruction and curricula development. Master's degree program in German language and literature was offered in 1974. The German professors were engaged in teaching, curricula development and review of theses which students had to complete in German for their completion. The program produced for Thailand the much needed German teachers, interpreters and tour managers. Additionally, scholarships have been granted by Goethe Institut since 1958 for German teachers to further education in Germany. The program helped produce sufficient number of German professors for Thai universities, German teachers for Thai high schools and professionals with German proficiency for German-related agencies.

4th Era: Progression of Higher d. (1977-2006 –present) (B.E. 2520-2549 – present)

Doctors from different tracts are being granted scholarships by an Alexander von Humboldt Foundation and DAAD for their doctoral study. This generally requires three years of study and a thesis in German. These doctors would return to Thailand and bring advances to the faculty of medicine of Thai universities.

Thai-German Technical School North Bangkok was upgraded to King Mongkut's Institute of Technology North Bangkok, offering a variety of engineering programs. In 2003, it established Sirindhorn International Thai-German Graduate School of Engineering (TGGS) whose courses are equivalent to and modeled after master's and doctoral degrees in engineering of RWTH-Aachen University of Technology, the Federal Republic of Germany. The institute aims to produce engineers with research and development capabilities to reflect the actual requirements of Thailand and South East Asia. An assistance fund of 45 Million Baht was made available via DAAD.

A doctoral degree in German is now offered by Faculty of Arts, Chulalongkorn University. Of the sixty credits, twelve are for courses and forty-eight are for the German thesis. The program is delivered by German and Thai lecturers.

SUMMARY

Higher education cooperation examined in this study involves advice, assistance and funding. The evolution in question does not cover the Thai higher education in its entirety but the Thai-German cooperation during different periods of time.

1st Era: Germany provided Thailand with military education by offering specially developed courses at their military school to reflect the needs of Thai officers and their application to Thai military school and armed forces.

2nd Era: Germany did not have the time to offer assistance during the world wars. They did resume trading during the peaceful time and continue to offer Thai medicine and language students the advices they require for further education in Germany.

3rd Era: The cooperation during this time concentrated on higher education in medicine, engineering, and, language and culture as they were in great demand by Thailand. Scholarships were granted for Thai students to further their education in Germany. Thai universities were given assistance in the form of curricula and German lecturers to help with the instructions.

4th Era: The evolution in higher education cooperation between Germany and Thailand continues with doctoral scholarships granted to Thai doctors, engineers and lecturers who are required to write a thesis relating to their field in Thailand. German professors are sent to Thailand to help with curricula development at King Mongkut's Institute of Technology North Bangkok. Funding and equipments are made available for the offering of doctoral degree program in engineering. Assistance is also granted for the development of master's and doctoral degree programs at other Thai universities, with German lecturers engaged in instructions and thesis reviews.

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A PILOT STUDY ON WOMEN'S INVOLVEMENT IN ENGINEERING

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ABSTRACT

The under-representation of women in education generally, and in the wide field of engineering in particular, has been given deserved attention. As a result of this worldwide attention, varied efforts have been made to find solutions to the inadequate number of women in engineering professions. The aim of this pilot study is to explore the extent of women involvement in engineering education in Malaysia. This study consists of two parts: analysis of gender balance of academics, lab-assistants and students in the faculty; and perceptions of female and male students regarding women in engineering at the Faculty of Engineering and Technology, INTI International University College in Malaysia. The involvement of the female academics in the faculty over seven years does not show any significant variation. The percentage of women academics in the faculty is currently around 28% which is comparable to some universities in Malaysia. Based on this study, it is observed that there may be no gender equity in the near future although the proportion of female students is increasing in engineering degree courses. There is no definite trend observed in female enrollment in diploma programs. Currently female student enrollment is about 12% in engineering degree courses and 9% in engineering diploma courses. However, among all the engineering programs Electrical and Electronic Engineering is the most attractive program for female students as well as highest involvement of female academics in the faculty. Overall perception of female students is encouraging towards interaction between students as well as faculty although under-representation of female academics and students is observed in the faculty. Awareness of gender equity in engineering has to be enhanced in the faculty as well as the nation.

INTRODUCTION

Although there are many more women in engineering today than a few decades ago, we are still far from reaching equal representation of men and women. Women in Malaysia represent almost half of the population and 36% of the work force, but just 12.8% of the engineering work force in 2005 and increased to 14.5% in 2006 according to statistics issued by Ministry of Women, Family and Community Development, Malaysia.

Women make up 56.8% of the total U.S. workforce, but only 8.5% of the country's engineers are women. On average, women compose only 20% of enrollment in engineering schools and are both less likely to choose engineering major and more likely to switch out of one than are men (Goodman et al., 2002). In Australia, a national average of women enrollments in engineering is 14.3% as reported by Holland and Kanga (2007). In Chile, women represent 13% of academics and 21% of students in

Chilean universities (Alvarez and Blazquez, 2007). Due to the low representation of women in engineering all over the world, for instance, Women in Engineering (WIE) programs have been developed at universities in many countries to assist in recruiting and retaining women in engineering majors. These programs offer academic and social support for female engineering undergraduates: mentoring, study and laboratory skills workshops, career exploration, social opportunities and support, outreach activities, scholarships and awards, and newsletters.

It is sufficient to argue that the under-representation of women in education generally, and in the wide field of engineering in particular, has been given deserved attention. As a result of this worldwide attention, varied efforts have been made to find solutions to the inadequate number of women in engineering professions. It is apparent that women are under-represented in the field of engineering in Malaysia as in other countries around the world.

The aim of this pilot study is to explore the extent of women involvement in engineering education in Malaysia. This study analyzes the trend in women participation (academic staff, laboratory assistants and students) at the Faculty of Engineering and Technology (FOEAT), INTI International University College (INTI-UC) in Malaysia. This study also involves the perception of female students on their experiences during their study in engineering as well as the perception of male students on their female counterparts in their classes. The authors hope that this study can be used to enhance the awareness of the gender equity in engineering education.

METHODOLOGY

This study consists of two parts: analysis of gender balance of academics, lab-assistants and students in the faculty; and perceptions of female and male students regarding women in engineering. The statistics, academic qualification and positions of female academics and laboratory assistants in FOEAT are collected for the period of December 1999 to January 2007 (22 semesters) and the female student enrollments in different engineering disciplines for diploma and degree courses offered from the period of December 2004 to January 2007 (seven semesters) by the faculty are also taken for analysis.

In this study, two questionnaires as instruments are used for perceptions of female and male students regarding the role of women in engineering. The first questionnaire is designed to analyze the female student perceptions and participation. It includes their backgrounds (demographic information, pre-college experiences) and the perceptions: engineering classroom environment (how encouraged or discouraged they were by academic grades, time required for coursework, classroom competition, pace), contentment in the engineering major (interest in engineering and happiness with choice of engineering major), and change in self-confidence, as well as participation in field trips and society clubs. It consists of 30 questions and takes about 15-25 minutes to complete. Some of the questions are extracted from the report written by Goodman et al. (2002) and modified appropriately for this study. The questionnaire for male students is designed to find out about their perceptions regarding women in engineering at INTI-UC.

RESULTS

Women academics and lab assistants in engineering

The involvement of the women academics in the faculty over seven years does not show any significant variation (Figure 1). The percentage of women academics in the faculty is currently around 28% which is comparable to some universities in Malaysia such as Multimedia University (25.35%) and University of Nottingham (33.3%), both located in Kuala Lumpur. But it is higher than in some other countries such as Chilean universities (13%) as observed by Alvarez and Blazquez (2007), Massachusetts Institute of Technology (just under 14%) by Hopkins (2006) and Dublin City University (10.8%) by Kennedy (2005).
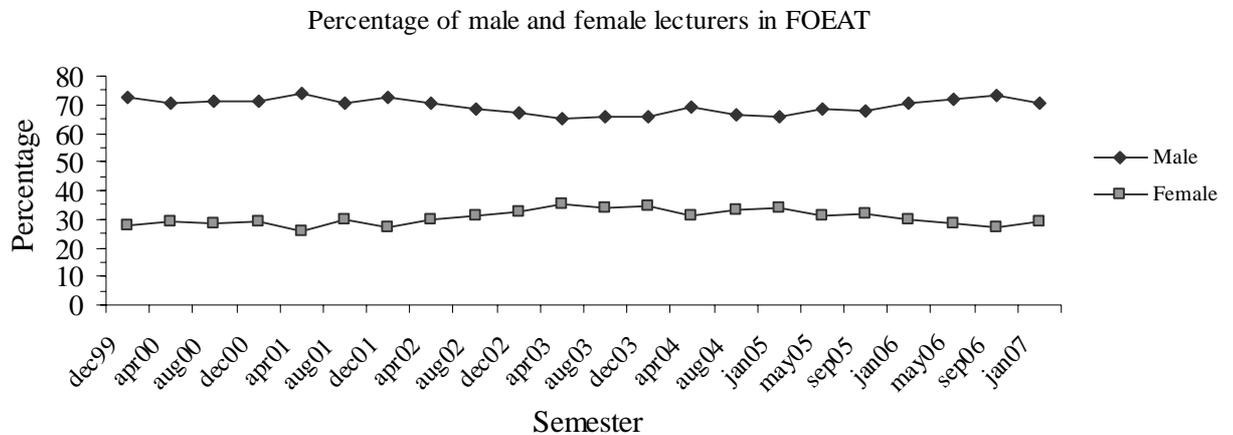
Figure 1. Percentage of male and female lecturers in FOEAT

The significant variation of female lecturers in Civil (CE), Mechanical (ME) and Electrical and Electronics (EE) engineering disciplines can be seen in Figure 2. From the figure, the involvement of female lecturers is highest in EE and almost the lowest in ME in every semester. Gender balance is achieved in EE engineering since August 2003 semester.

Percentage of female lecturers in different disciplines
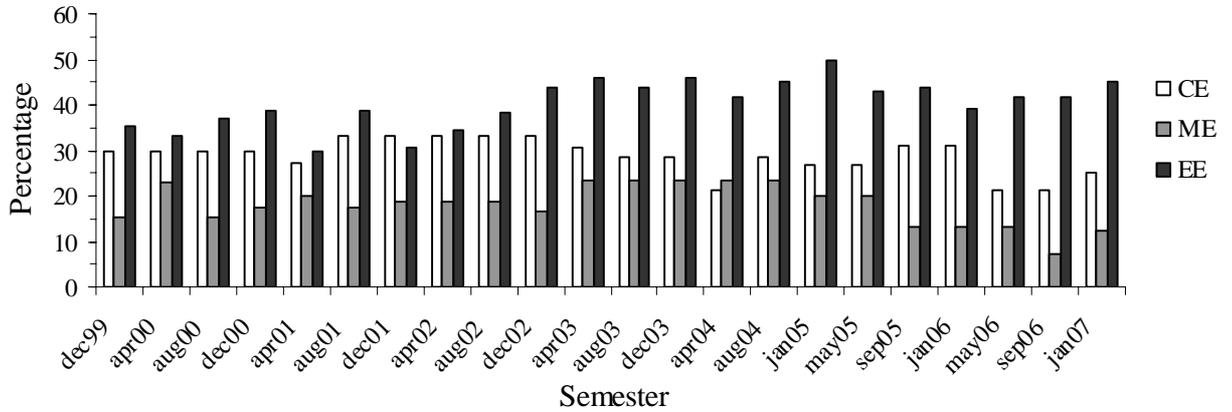
Figure 2. Percentage of female lecturers in different disciplines

Figure 3 shows the gender distribution across the academic qualification and various levels of seniority from lecturer to full professor. The data in Figure 3 shows that there is significant gender imbalance at Professor and Associate Professor levels although academic qualifications between male and female academics do not seem significant. Kennedy (2005) pointed out that there is significant gender imbalance at all levels of the career ladder in Dublin City University. The gender imbalance worsens as progress is made along the career ladder to positions of greater power and decision-making.

Percentage of staff at different academic qualification and position in FOEAT
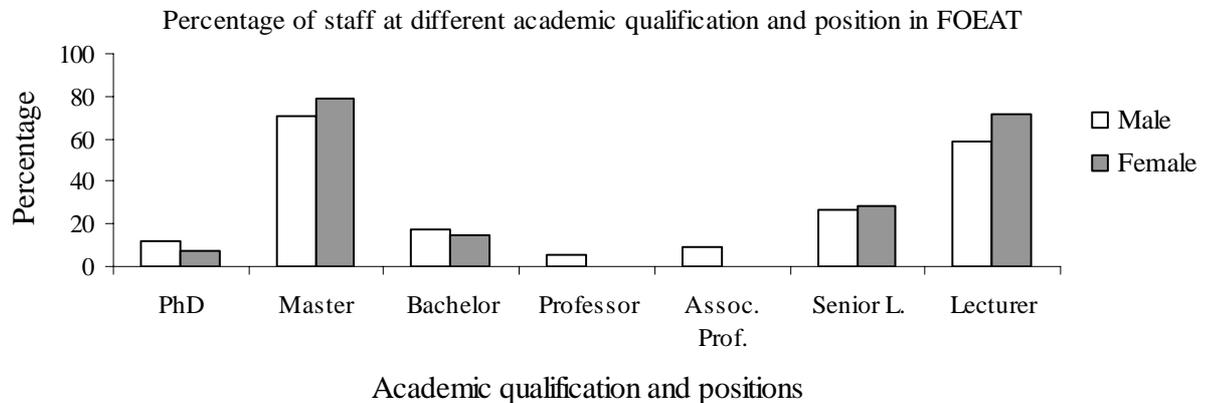
Figure 3. Percentage of staff at different academic grades in FOEAT

Figure 4 shows an increasing trend in percentage of female lab assistants (lab technicians who obtained diploma certificates and lab tutors who obtained degrees in their respective engineering disciplines) from May 2005 semester to January 2007 semester. Currently the percentage of female lab assistants is about 75%. Gender equity is observed since April 2003.

Percentage of male and female Lab-assistants in FOEAT
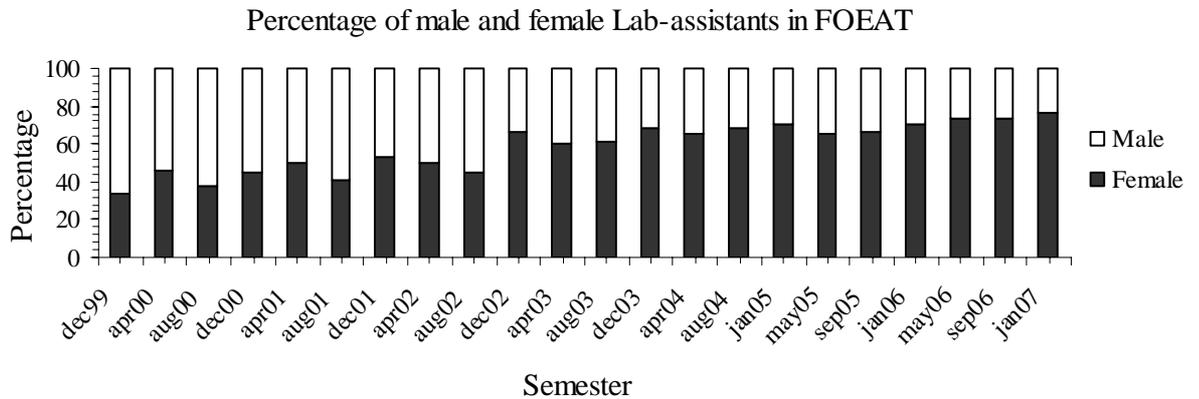
Figure 4. Percentage of male and female lab assistants in FOEAT

Female student enrollments in engineering

The percentage of female enrollments in degree and diploma programmes is shown in Figure 5. It is observed that there may be no gender equity in the near future although the proportion of female students is increasing in engineering degree courses since May 2006 after a decreasing trend for the past five semesters. There is no definite trend observed in female enrollment in diploma programs. Currently, female student enrollment is about 12% in engineering degree courses and 9% in engineering diploma courses. A total female enrollment in FOEAT is 10.83% in January 2007. It shows a lower female enrollment in INTI-UC as compared to Australian universities (14.3%), Chilean universities (21%) and engineering schools in the U.S. (20%). Soltane (2007) showed the variation of percentage of female enrollment in engineering in some African countries (Algeria (28%), Congo (10%), Ethiopia (11%), Morocco (23%), South Africa (24%), Uganda (19%). No female enrollment is observed in Gabon, Sudan and Mauritania. Badekale (2003) reported that female enrollment in all universities in Nigeria from the period of 1983 to 1988 varies from 2.2 to 5.8%.

Female enrollment in diploma and degree programmes
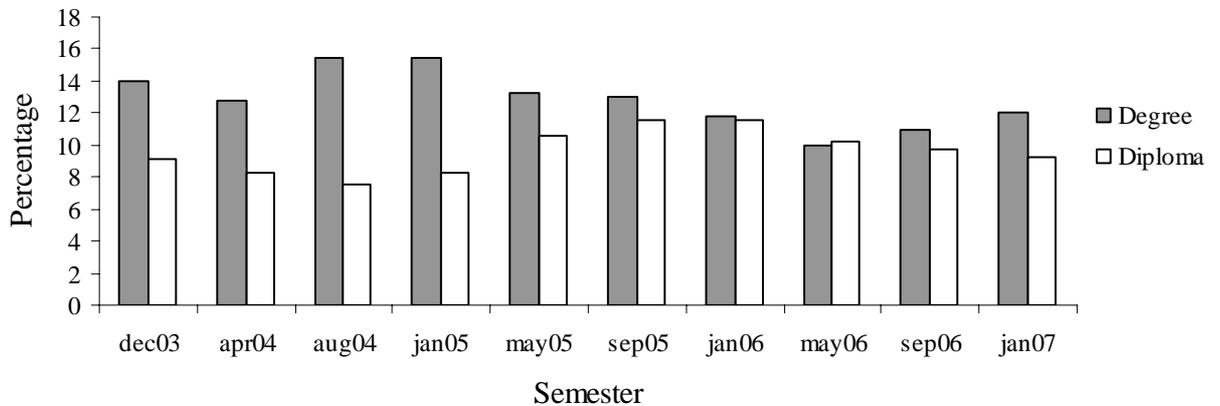
Figure 5. Percentage of female enrollment in diploma and degree programmes

Figure 6 represents the percentage of female enrollment in three disciplines in engineering. It is observed that EE has for the periods examined the highest percentage of females among all disciplines. Gender equity is achieved in EE every semester. This could be due to the fast growth of electronic industry in Malaysia. Mechanical Engineering consistently has the lowest rate of female enrollment. Everts and Oost, 1986 (cited by Badekale, 2003) suggested that the reason could be related to a general perception of unfavoured fields as a male domain; mechanical engineering has to do with instruments, machines and tools, while on the other hand, the society portrays the women as soft, gentle and fragile.

Percentage of female enrollment in different disciplines
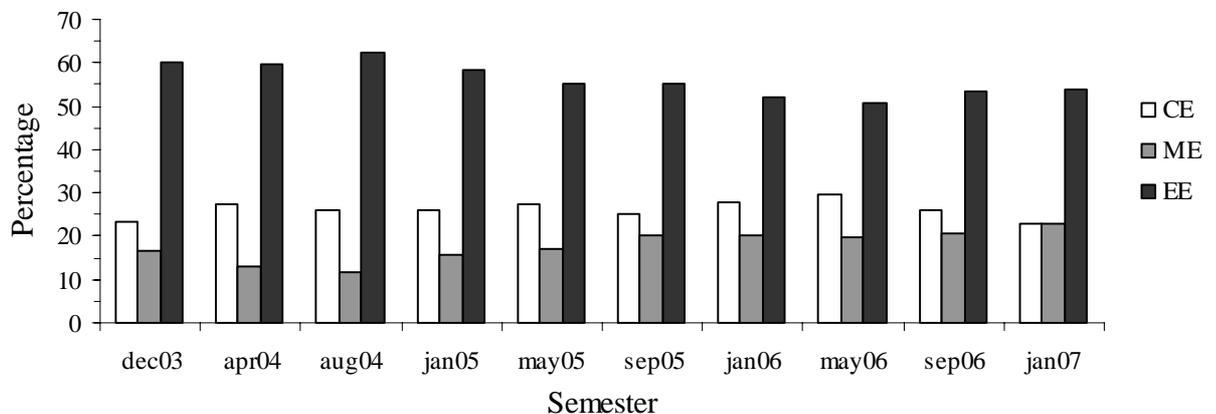
Figure 6. Percentage of female enrollment in different disciplines

Performance of female students

INTI-UC celebrates the ceremony of Academic Award Presentation twice a year. Students who excelled in their academic pursuit receive academic awards. The percentage of female students receiving academic awards in degree and diploma

programmes is presented in Figures 7 and 8 respectively. Female students in engineering do as well as or better than their counterparts since the percentage of female students receiving academic awards is higher than that of male in both degree and diploma programmes.

Percentage of students receiving academic awards (Degree programmes)
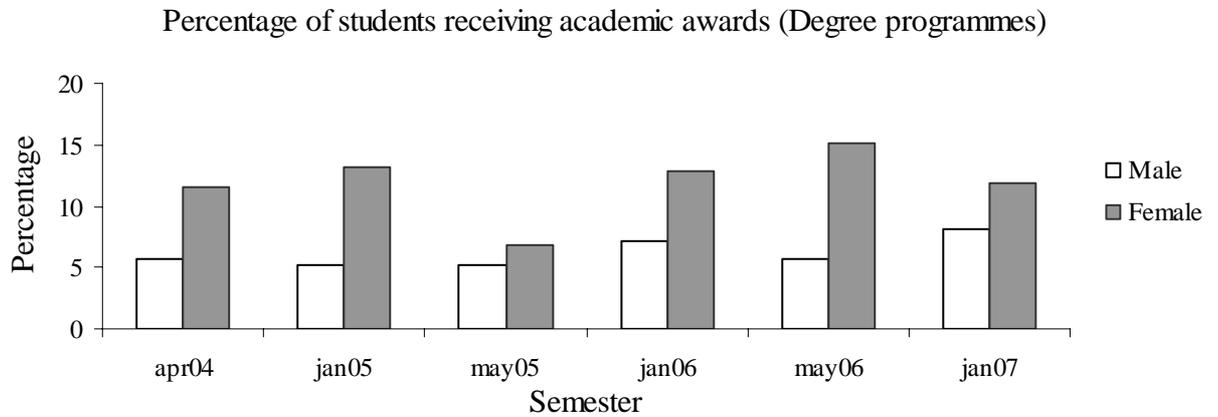
Figure 7. Percentage of students receiving academic awards in Degree programmes

Percentage of students receiving academic awards (Diploma programmes)
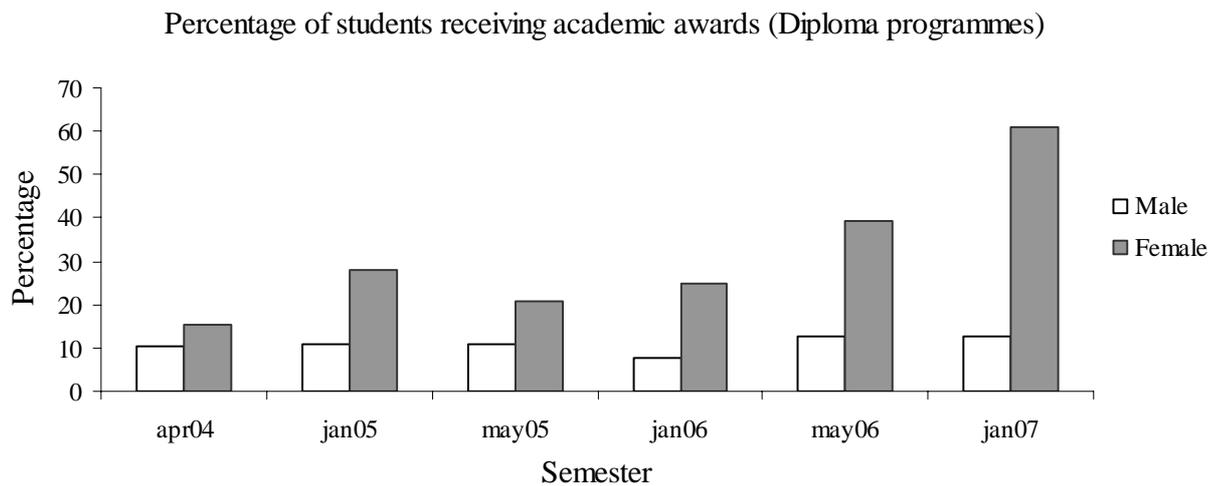
Figure 8. Percentage of students receiving academic awards in Diploma programmes

Background characteristics

In order to achieve as much validity as feasible, the questionnaires are given to female students and male students from different disciplines in FOEAT. Analysis is carried out on the responses obtained from 96% of male students and 83% of female students. Based on the findings obtained from the questionnaires, the study reveals the following:

Demographic information

A majority of female respondents were Malaysian (81%). International female students came from countries such as Bangladesh, China, Indonesia and Vietnam. Most of the

students came from public secondary schools (72%) and the remaining female students from private school. Seventy-five percent of the respondents were between the ages of 19 and 22, with 15% were older and 10% were younger.

Pre-University experiences

Respondents reported the types of courses they took and experiences they had in science and mathematics prior to attending INTI-UC. Not surprisingly, a large majority of female engineering students reported taking multiple mathematics (85%), physics (85%), chemistry (83%) and biology courses (81%) in secondary school. Half of the students took calculus during their secondary school. After completion of secondary school, 12% of students completed University Foundation Programme at INTI-UC before entering degree programmes.

Half of the female students reported that they decided to enter engineering because of their early interest and abilities in mathematics and science. Some were attracted by the kind of work engineers do, especially the applications: for instance, helping people and society, building and designing and improving the environment. One third of the respondent chose engineering due to job opportunities and salary potential and influence from people in their lives.

College experiences and perception

Most significant sources of encouragement and discouragement

About 65% of female students identified a mother and/or father as the most influential and the second-most influential people in their decision to major in engineering. Female students were encouraged to pursue an engineering degree by father and mother and other factors such as interest in the subject matter, employment opportunities and salary potential.

Classroom environment

Respondents chose academic grades as the most significant sources of encouragement (50%). A fair number of the respondents reported that the pace of engineering courses (44%), number of women in the class (56%), amount of time required for engineering coursework (35%) and competition in engineering (40%) did not affect them.

Contentment in the engineering major

Three-fourth of the respondents had decided to major in engineering before they had entered college. About 80% of them were happy with their choice of engineering. Seventy percent of female students would either definitely or probably encourage other women to major in the study programme. Thirty percent said they would be neutral so that they would not encourage/discourage others.

Change in self-confidence

Students strongly agree that their self confidence has changed in math ability (35%), overall academic abilities (17%) and moderately in math (40%) and overall academic (50%).

Reasons for participation in field trips to industry site

Eighty percent of students participated in society clubs, 52% in taking field trip to industry site. Students participated in field trip to industry site in particular, for many different reasons: socialize with classmates in engineering (63%), getting help with engineering coursework (65%), learning about a topic of interest related to engineering (80%), being in a supportive atmosphere (55%) and getting to know the faculty (65%).

Engineering courses, student interaction and student/faculty interaction

To many of the questions, a majority of students gave a response that was a positive assessment of engineering conditions at the faculty. A minority of students (14%) agreed that their courses 'were less relevant to women than men', but the majority (80%) agreed with the proposition 'My engineering department was supportive of women students'. More than half of students (65%) disagreed that 'the competitive climate in engineering favored male students'.

Students tended to be more ambivalent about the engineering workplace. About one-third agreed that 'it is easier for women to go into some fields of engineering than other fields' and more than half agreed that 'it is more difficult for a woman to balance a career and family in engineering than in most other fields'. Roughly half agreed that 'being a woman improves my prospects of finding a job in engineering' and 70% of them disagreed that 'women in engineering are generally offered higher-paying jobs than men'. About 54% of students agreed that 'engineering departments should have special programs to address women's needs.'

The female students reported that in such male dominated classes, there usually exist friendly and co-operative males. Some males were considered nice and were very helpful to the females and willing to share their ideas with them. Most of the respondents indicated that they did not have loneliness and frustration in a largely male-dominated class.

On the questionnaire, women were asked to compare themselves to their male students whether they had advantage or disadvantage in the areas of interacting with faculty staff or getting support from academic staff. Sixty percent of women felt that they had advantage and forty percent of women felt no advantage or disadvantage compared to male students in both areas.

Male student perception on females in engineering classes

Male students are requested to express their perception on how their female classmates experienced their courses and classes. A majority of male respondents were Malaysian (78%). International male students came from countries such as China, India, Kenya,

Maldives, Mauritius, Myanmar, Nigeria, Sri Lanka and Yemen. Seventy-six percent of the respondents were between the ages of 19 and 22, with 20% were older and 4% were younger.

Male students have a positive attitude on female students in engineering as summarized below:
• Respondents like to include female students in their group for practical or lab session (97%).
• Respondents like to choose female students as the class representative for their class (81%).
• Females are equally able to carry out assignments like their male counter-parts do (85%).
• Female students can freely ask questions and participate in lessons (80%).
• Female students can perform as well as male students in practical classes (67%).
• Female students have ability to discuss academic problems with others when out of class (82%).

CONCLUSION

This study has attempted to reveal the involvement of women in engineering as follows:
• Under-representation of women in engineering is observed in the Faculty of Engineering and Technology since females represent 28% of academics and only 10.83% of total students in FOEAT.
• It can be observed that among all the engineering programmes, mechanical engineering discipline is least attractive and electrical and electronics engineering is the most attractive programme for female students in the faculty. It is obvious that electrical and electronic engineering is the most attractive programme offered at INTI-UC, since Malaysia is one of the leading electrical and electronic product exporters with almost 1000 companies in this industry.
• Academic performance of female students in engineering is better than their male counter-parts.
• Overall perception of female students are encouraging towards interaction between students as well as faculty although lower representation of women in their classes. Male students have a positive attitude on the performance of female students in the classes.

RECOMMENDATION

Based on these findings, it is recommended for higher educational institutions, particularly Engineering Faculties to:
• Organize conferences and seminars on gender equity in engineering to increase awareness and understanding amongst the profession and wider community of the diversity, competence, influence and passion women have for engineering.
• Develop a special program to attract the girls from secondary school to enter engineering programmes and support the female students in the faculty.

Acknowledgement

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HIGHER EDUCATION REFORMS IN PAKISTAN: ISSUE OF ACCESS AND EQUITY

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ABSTRACT

With the inception of Higher Education Commission in 2002, higher education has been undergoing major structural change. To improve access to higher education a number of postgraduate scholarship programs have been introduced of which one is the award of indigenous postgraduate scholarships to meritorious students. A local Graduate Record Examination (GRE) type National Postgraduate Scholarship Examination is conducted countrywide to select the awardees.

This study was conducted to explore the socio-demographic profile and to investigate the reliability and validity of the examination and influence of gender on the results. The sample comprises 13,331 students who appeared countrywide at 15 centers for National GRE Type Postgraduate Scholarship examination in December 2003. Differences in fields of study and gender enrolment are observed. Similarly there is under and over representation of some fields of the study in the sample. When the examination results were analyzed gender differences were also observed in scores in two components i.e. quantitative and verbal domains. The results are discussed with recommendations and will be able to generate discussion on pertinent issues & trends in higher education for policy planners.

INTRODUCTION

Higher Education system is currently undergoing major changes in Pakistan. The number of institutions of higher learning has dramatically increased in the past decade to accommodate the increasing number of students (Fig: 1). Higher Education Commission (HEC) has been established in 2002 to restructure higher education system. The budget for higher education has been increased to Rs. 22 billion (including development expenditures) in 2006 from a mere Rs. 500 million in the year 1999-2000. The three areas that HEC has focused its strategic plan are Access, Quality and Relevance in Higher Education and positive changes in the system are already visible. The enrolment figure for year 2004 -05 is 5, 20 666 (Ministry of Finance, 2005) i.e. 5055 students per university as compared to 2600 only five years back (Isani and Virk, 2001).
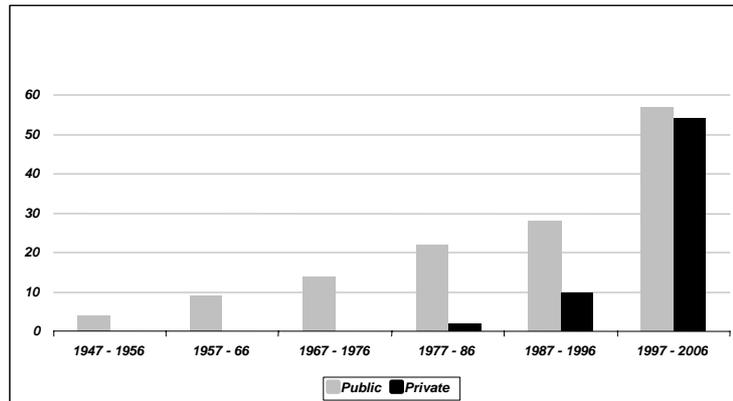
Figure 1: Number of Universities and Degree awarding Institutions: 1947 – 2006

A number of postgraduate scholarship programs have been introduced to improve access of which one is the award of indigenous postgraduate scholarships to meritorious students. A local Graduate Record Examination (GRE) type National Postgraduate Scholarship Examination is conducted countrywide to select the awardees as part of the selection process.

In December 2003, the Learning Innovation Division of Higher Education Commission undertook a major study of the National Postgraduate Scholarship Examination. The objectives of the study were to;

- explore the socio-demographic profile of the participants in the examination.
- determine the preferred fields of study and if they are in proportion to the current enrolment.
- investigate the reliability and validity of the examination and to identify if there are any gender differences in performance on the different components of examination.

METHODOLOGY

Sample
The sample included participants in the National GRE type examination conducted by Higher Education Commission for the award of indigenous postgraduate scholarships. The eligibility to appear in the examination requires graduation and age below 40 years[1] with no third division (less than 45% of total marks) in the academic career. Only one second division is allowed (between 45 and 60% of total marks).

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[1] Although the eligibility criteria require age 40 years or below, 12 respondents in the group are above 40 years.

Instruments
A self reported questionnaire was designed to elicit socio - demographic information from participants. Additionally scores of the performance of each student were obtained from the National Testing Service, which conducts scholarship examinations on behalf of Higher Education Commission.

Procedure
The National GRE type Scholarship Examination in Dec 2003 was conducted at 15 centers across Pakistan simultaneously including Azad Jammu & Kashmir. The demographic questionnaire was distributed to all the participants at the end of examination and the participation was voluntary.

RESULTS
The data was analyzed using SPSS version12.0 for Windows. Of the total 13,331 students who appeared in the examination, 10 557 participants (79%) completed the Questionnaire and were included in this study. However the results of examination for all 13, 331 candidates were available. The results are therefore analyzed in two parts. The first part deals with the profile of candidates who filled in the questionnaire and the second relates to the reliability and gender differences in the examination.

Demographic Profile

The distribution of candidates in each field is given in Table: 1. Mathematics and IT related fields have got highest number of applicants. Creative Arts has lowest number of applicants, which reflects on the state of education in the field. There are very few institutions that impart education in Creative Arts and again they are limited to only major cities of Pakistan i.e. Karachi, Lahore and Islamabad. Similarly Law and Education represent lower number of candidates.

This can be explained on the basis that the eligibility to appear in the examination requires more than 60% marks (first division) in the earlier examination and only one second division (between 45- 60 % marks) is allowed while Law and Education are the fields which do not attract the best students most of the time and it may be assumed that the student who opt for these fields may have been low achievers in their academic performance and thus are not eligible to appear for the exams. On the other hand it is surprising to see that there are less than 300 (3 %) candidates from Health Sciences, who are usually high achievers as students. The only explanation is the postgraduate qualification,

Table 1 Number of respondents in each field			
	Male	**Female**	**Total**
Creative Arts	4	4	8
Chemical Sciences	635	201	836
Computing and Mathematics	1752	205	1957
Humanities & Social Sciences	1155	320	1475
Economics & Commerce	566	128	694
Education	216	60	276
Engineering	999	61	1060
Law	22	4	26
Life Sciences	698	354	1052
Management Sciences	481	87	568
Health Sciences	228	71	299
Natural & Agricultural Sciences	997	101	1098
Physical Sciences	759	105	864

which is more attractive to medical and dental graduates, is the Fellowship of the College of Physicians & Surgeons Pakistan than MS/MD. There are more than forty disciplines in which the College offers specialization but since these programs are not included in the list of programs offered for the award of scholarship the prospective applicants may have been disadvantaged.

Similarly there is observable gender difference in all the fields except Creative Arts and women are less represented in the examination. This is a significant area to be explored because the female enrolment in higher education is constantly increasing in fact in the medical program the ratio between male to female students in some institutions is almost 1:8. Figure 2 provides information about the trends in enrolment gender wise for each year and the gap narrows at graduate level. Yet if we look at the gender representation in our sample the gap widens at graduate level (Fig: 3).
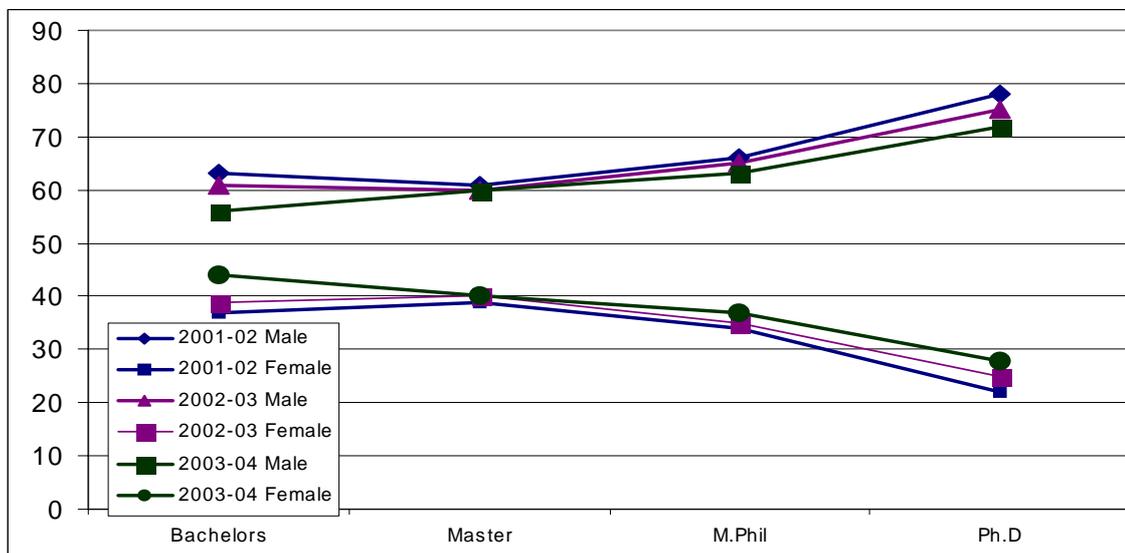
Fig 2: Enrolment in percentage by Gender in higher degrees 2001 - 2004
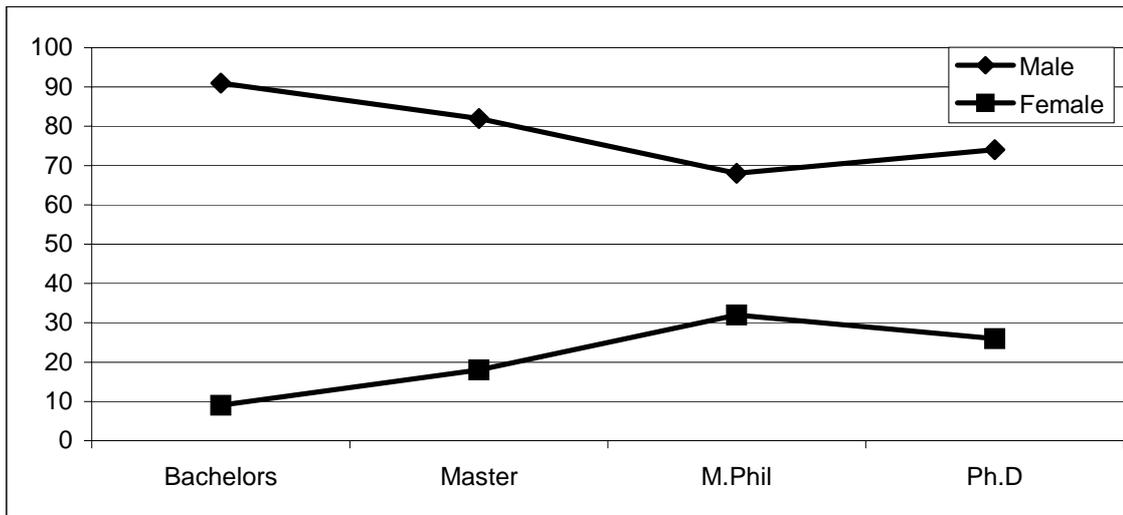
Fig 3: Highest qualification by gender in percentages for scholarship applicants

Again the reasons that can be given may be more of cultural reasons for instance the bond requirements of the program. 60% of the applicants are single and unmarried (Fig: 4). While it is acceptable for a male student to sign a bond assuring an extended period of service in the country it is rather difficult in case of a female applicant to sign a similar bond who is still uncertain for what future holds for her. At the same time if we look at the age distribution of the respondent 64% are older than 25years (Fig: 5). Worldwide mature students are entering higher education and this is also reflected in our results where only 36% respondents belong to the younger age group. The eligibility to appear for scholarship examination is 40 years otherwise we could have expected more mature students. This is again a serious issue that needs to be considered by policy makers and specially when the education policy also states '*Merit shall be the only criterion for entry into higher education*.' The access to education should not be restricted to a particular age group. While the existing education policy states that the access to higher education shall be expanded to at least 5% of the age group (17-23 years) by the year 2010 (Ministry of Education, 2005) plans should also be made to cater for the needs of mature age students.
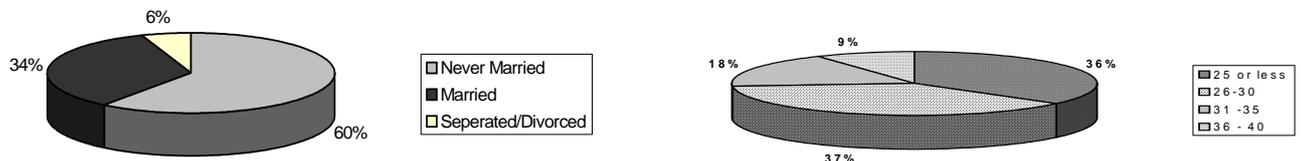
Figure 4 and 5: Marital status and age group of the respondents.

National Scholarship Examination

The National Scholarship examination comprises 100 one best type of multiple choice questions in the examination with following distribution.

English   25 items
This section assesses the skills of English Language with main stress on the grammar, vocabulary and reading comprehension

Analytical   35 items
This section contains data interpretation questions based on some data values or graphs.

Quantitative   40 items
This section contains questions based on mathematics. Mathematics is a compulsory subject in the Pakistan's educational system at least up to secondary level.

The final mark is based on the composite score achieved by the students on the examination.

A total of 13331 candidates appeared in the examination. This included 11732(88%) men and 1599 (12%) women. Results in all parts of the 2003 National Scholarship Examination were analyzed. Descriptive statistics, reliability coefficients and correlations among different components and total scores were estimated. The mean marks according to gender with 95% intervals were calculated and tested for significance.

Reliability of the total test comprising 100 test items is 0.83. For individual components reliability coefficients are given in Table 2.

Table 2: Reliability Coefficients of individual components		
1.	English	0.57
2.	Analytical	0.65
3.	Quantitative	0.73

While the overall reliability of the examination is acceptable, the reliability coefficients for the first two components are below acceptable range for standardized tests. To increase the reliability of tests the number of test items in the two components i.e. English and analytical thinking may be increased. The Pearson's correlations among different components are given in Table 3. Since quantitative score has more weighting than the rest of the two sections the correlation with total score is also higher. However the correlation between the individual components is very low which means that the three components are measuring three unrelated constructs.

When examined for gender differences using t tests for significance, significant differences were observed on two sections, English and Quantitative. No differences were observed on Analytical thinking (Table 4).

Table 3: Correlations among different components			
	Analytical component	Quantitative component	Total Scores
English	.214(**)	.127(**)	.486(**)
Analytical		.147(**)	.559(**)
Quantitative			.847(**)
** Correlation is significant at the 0.01 level (2-tailed).			

Men performed better than women on total scores (p=.000). Analysis of individual components show women performed better in English component while men performed better on Quantitative component. No significant differences were observed in the Analytical thinking.

Table 4: Mean performances in the Examination

Examination	Male N=11732		Female N= 1599			
	Mean Scores	[95% CI]	Mean Scores	[95% CI]	t	p
English	9.68	[9.62 – 9.74]	10.17	[10.00 – 10.34]	5.469	.000***
Analytical	9.55	[9.48 – 9.63]	9.76	[9.54 – 9.97]	1.856	.064
Quantitative	18.51	[18.36 – 18.65]	15.06	[14.68 – 15.43]	16.12	.000***
Total	37.75	[37.56 – 37.95]	34.99	[34.48-35.50]	9.63	.000***
*** Correlation is significant at the 0.001 level (2-tailed).						
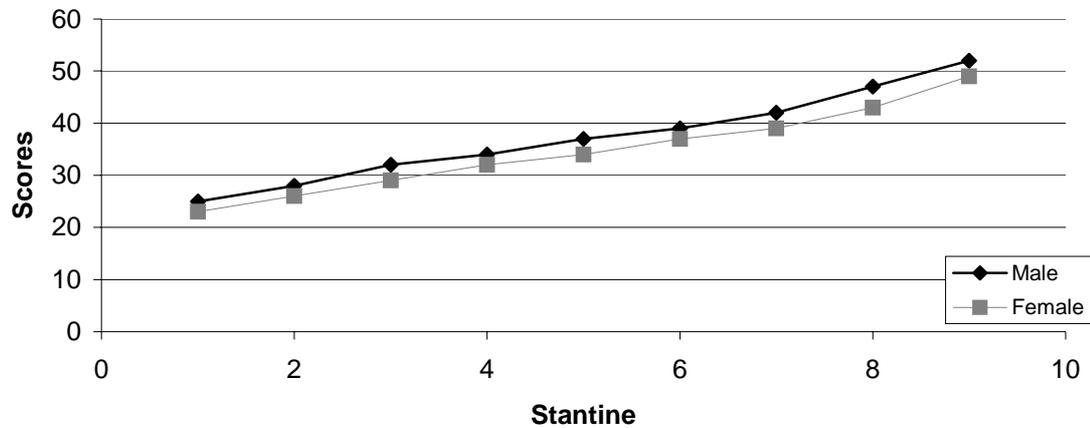
Fig: 6 Total Scores

Later the raw scores were converted into percent scores so all three components are weighted equally and average of three scores was taken as the final score. Men still performed significantly better than women (p= .000).

Discussion

Analysis of equity across Asia needs to consider four types: gender related, income related, region related and socio cultural (Lee, 1998). In the context of education gender differences in achievement test have been an established area for research and debate (Hubbard (2005), Francis (2001) and Elwood, 2005) and so are the differences in subjects of study chosen (Sutherland, 1994). The existing higher education policy in Pakistan envisage a system that will be able to expand the access to quality higher education on merit and equitable basis irrespective of region, class (Education Policy, 2004) therefore it is important to know that no one is disadvantaged on the basis of age, gender, class or region. The National Scholarship Examination provides access to a fully funded research program for the best students in the country so it was worthwhile to examine the profile and performance of students from the gender perspective.

The difference in quantitative scores is higher than that on the English score and favors male candidates. Several factors in the literature have been identified for the differences in quantitative questions (Geering, 1993). Males are more likely than females to be enrolled in mathematics, physics, computer sciences and engineering which have more emphasis on quantitative skills. Mathematics is a subject of choice for few female students not because they do not like it but for a variety of other reason. First, they do not have appropriate facilities in their institutions at lower level for the subject. Second, there are less female teachers for mathematics in the institutions and third they may not be encouraged to study mathematics by the family.

The weighting of quantitative skills is a disadvantage for women because of a very limited exposure to mathematics for women. Similarly although women scored higher on verbal component yet the total scores are affected by the weighting given to Quantitative scores, which is 40%, compared to 25% for the Verbal component. The weighting of different components of the scholarship examination therefore needs to be re-examined in order to provide equal opportunity for women to compete.

Conclusion

Access and equity is a major issue in higher education worldwide. In this study we explored the socio-demographic profile of the prospective students in higher education with reference to the preferred field of study, gender, age and marital status using data from the National Scholarship Examination. Differences in gender and fields of study are evident through results. While efforts have been in place to improve the access it is also imperative to improve the retention rates of the students, which are not encouraging at the moment. This can only be possible if the policy planners have a clear picture of what is the profile of students entering higher education and examine the changes in trends over a period of time. This requires close analyses of various variables because it is usually a range of factors that influences participation and retention rates in higher education. The weighting for individual components of the examination also needs to be revisited because with current weighting students with a mathematical background are more advantaged and these are predominantly male. There is a need to continue monitoring achievement by examining trends in subsequent examinations and for a secondary analysis to gain a better understanding of what factors are contributing or impacting achievement. Similarly access and equity is a much broader field which could not be succinctly encompassed in this study and more work needs to be done to inform policy makers.

Acknowledgment

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DIFFERENCES BETWEEN ANGLOPHONE AND FRANCOPHONE HIGHER EDUCATIONAL MODELS: STUDENTS' PERCEPTIONS OF THE QUALITY OF PERFORMANCE OUTCOMES

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The article examines differences in students' perceptions of quality between two types of higher educational models, Anglophone and Francophone, in the Lebanon. The study explores the impact of the two educational models on a range of performance outcomes based on students' perceptions of their overall educational experience. More specifically, it examines the different modes of operation adopted by the universities to facilitate the realisation of tangible mission objectives reflected in demonstrable outcomes, such as the realization of democracy ideals, the effectiveness of teaching/learning experiences, the quality of services, and student destinations. The findings indicate that both Anglophone and Francophone institutions tend to support democracy and readily involve students in decision-making in both academic and non-academic activities. Anglophone institutions tend to provide a more liberal and student-centred mode of education than the Francophone institution. In both institutional types, however, students expressed satisfaction in the quality of the university in terms of teaching/learning experiences despite the considerable differences in the pedagogical approaches adopted by the institutions.

INTRODUCTION

The concern with quality in higher education is by no means new. It is articulated primarily because higher education which was mainly producer-oriented, directed towards the interest of its scholars, has shifted emphasis focusing more on the interests of a larger population of stakeholders as students, parents, employers, staff and governments (Slaughter and Leslie, 1997). While there is no overall consensus among academics, policy makers and other concerned parties on what constitutes quality in higher education (Lakomski and Marshall, 1998), different stakeholders assign different values to criteria of quality based on their own goals (Donald and Denison, 2001).

This article focuses on students as stakeholders and on their perceptions of quality in higher education, taken from a larger study of the Lebanon (Nauffal, 2005). It provides a unique setting which is comparative in itself having so many educational models under one roof. The uniqueness of the setting however seems insignificant, particularly in multicultural times where highly educated charismatic youth are a mobile economic resource and where knowledge and skill are a source of relative economic advantage (Thurow, 1999). The different educational models produce different core activities in teaching and learning and varied educational outcomes, the 'quality' of which is the basis for competition among the institutions of the Lebanon. In contextual situations where

student perceptions of quality are used as performance indicators, this study perhaps will have resonances for academics and academic leadership in other parts of the world.

Quality of a University Education

The literature on students' perspectives on quality indicates that the quality of a university education is a function of many variables such as the quality of teaching, the quality of a university experience, possibilities of employment, career horizons, opportunities for personal growth, and many others. Students understand that the market value of their education is a function of the perceived quality of education (Ortmann and Squire, 1998). As quality of education is difficult to evaluate directly, the market value of a degree is a function of the institution's high academic standing and relative merit (Keith, 2001).

Institutional ratings are positively influenced by a range of factors such as student admission selectivity and graduation rates) and faculty scholarship outcomes (research funds, research publications and consultancy rates) (Keith, 2001). As noted by Benjamin and Hersh (2002) however, these ratings depend mainly on input variables such as student aptitude, student-faculty ratios, financial and institutional resources and do not measure the knowledge, skills, and competencies that students develop as a result of their university education. The degree to which an institution develops the abilities of its students and facilitates transformations in their understanding is referred to as 'value added' or what Harvey and Green (1993) have defined as the 'transformative' implication of the term 'quality'. It is the 'value added' that reflects the quality of an education attained which is enhanced primarily through effective teaching and learning practices.

Teaching and Learning Effectiveness

Teaching effectiveness has been found to be multidimensional; in other words, there are different components to effective teaching. From the perspective of faculty members, effective teaching entails the development of critical thinking, the enhancement of a deep understanding of principles, the establishment of links between theory and practice and the acquisition of lifelong learning skills (Knapper, 1990). According to employers, effective teaching instils in students qualities such as flexibility, creativity, as well as communication, analytical and problem solving skills. From the perspective of students, subject knowledge, organisation, efficiency, self-confidence, clarity of objectives, value of assessment, availability, expectation level for students, class orientation and openness were some identified characteristics of effective teaching in the USA in the 1970s (Feldman, 1976). More recently, Sheehan and DuPrey (1999) conducted a study in the USA in which they found five items to be associated with effective teaching. These items, in descending order of significance are: (1) informative lectures, (2) tests, papers and other assignments as good measures of course material, (3) instructor preparation, (4) interesting lectures and (5) students' perceptions of a challenging class environment. Marsh and Roche (1997) identified nine dimensions of effective teaching based on input from both students and faculty members. These dimensions are: learning/value, instructor enthusiasm, group interaction, individual rapport, organization/clarity, breadth of coverage, examinations /grading, assignments/readings, and workload/difficulty.

While what constitutes effective teaching has not evolved profoundly over the years as indicated by a literature review, any changes in approaches to teaching and learning in higher education have also been rare (Lueddeke, 1999). According to Barr and Tagg (1995) students must be active discoverers and constructors of their own knowledge for them to be able to uncover knowledge. For deeper understanding they must actively engage in learning (Howell, 2002), reflect on learning experiences from a range of perspectives, form concepts and develop theories (Gardner and Korth, 1997). According to Clark (1997: 242) an efficacious way to educate students is through their involvement in research which serves as 'an important mode of teaching and a valuable means of learning'. Jacob and Eleser (1997) claim that depriving students of such learning experiences denies them of their independence and reduces their decision-making power. It seems then that a primary goal of engaging students in their own learning is to develop autonomy and foster a sense of responsibility (Howel, 2002).

In most universities however, the prevailing learning approach is the lecture approach (Lueddeke, 1999). This approach is the product of an educational system that teaches students to view instructors as authorities who relate truth and are responsible for student learning (Greene, 1988). In such educational systems students assume a role of passivity. As Beane (1997) notes, the consequences of such a learning style is the development of a sense of dependency in students and avoidance or lack of participation in decision-making. The adoption of this approach is supported by arguments of limited resources, prevailing methods of reward that encourage faculty to shift efforts towards research which offers opportunities for personal and institutional advancement away from effective teaching (Ortmann and Squire, 2000) and issues related to the culture of the organisation.

The debate concerning the purposes of higher education has oscillated since the days of Hippocrates between vocationalism, which stresses the importance of skills and their transferability and truth-seeking which stresses the importance of knowledge and understanding (Brown, Bull, and Pendlebury, 1997). In their assessment of student learning in higher education, Atkins et al's. (1993) outline of the purposes of higher education goes beyond the vocationalism and truth-seeking views to include (1) specific vocational preparation, (2) preparation for general employment, (3) preparation for knowledge creation and (4) general educational experience. Accompanying the different views of the purposes of education are varied values assigned to student learning and achievements. Rowntree (1987) indicates that one must look into the student qualities and achievements that are actively valued and rewarded by an educational system to discover the truth about the system.

An effective institution, as Astin (1988) asserts, is one that can affect its students and faculty favourably through the simultaneous consideration of inputs, environments, and outcomes, an essential component of any quality management strategy. Based on these constituents of quality management, this study explores the impact of the various historically grounded institutions of higher education in Lebanon, which follow different educational models, on a range of performance outcomes. More specifically, it examines the different modes of operation adopted by the universities to facilitate the realisation of clear tangible mission objectives reflected in a set of demonstrable outcomes, such as the realization of democracy ideals, the effectiveness of teaching/learning experiences, the quality of facilities, infrastructure and student destinations.

METHOD

The study included five universities. Four of the five universities follow the Anglophone educational model or more specifically the American educational model, namely; the American University of Beirut (AUB), and the Lebanese American University (LAU), the University of Balamand (UOB) and Notre Dame University (NDU). The Université Saint Joseph (USJ) follows the Francophone educational model. The student makeup of these universities accounted for approximately 20% of the student body in Lebanon or 80% of the higher education cohort of students registered in universities following both the Anglophone and Francophone educational model for the academic year 2001 (CERD, 2001).

To measure student output, a questionnaire was designed around four themes, namely; the realization of democracy ideals, the effectiveness of teaching/learning experiences, the quality of facilities and services, and student destinations. Research literature relevant to the outcomes of higher education for students and their relationship to the concept of institutional effectiveness informed the construction of the student questionnaire (Sheehan and Duprey, 1999; Marsh and Roche, 1997). The investigators constructed the 26 items on the questionnaire written originally in English, which is the language the investigators are eloquent in. Respondents in the Francophone institutions where the language of instruction is French were given a translated Arabic version of the questionnaire to complete since Arabic is the native language of the country. Respondents in all universities however, were given the choice to complete the questionnaire in either Arabic or English according to their preference.

A pilot study was conducted in two stages. The first stage involved a sample of 40 third year students, 10 from each Anglophone institution. All students completed the questionnaire in English. In order to discover potential pitfalls in the translated questionnaire, two students from each Anglophone university agreed to fill out the Arabic version of the questionnaire alongside the English version. Upon completion of the questionnaires respondents discussed with one of the investigators various issues as format, clarity, language, vocabulary, ambiguities and the conceptual difficulty for both the English and Arabic versions. Modifications in the questionnaires were then made based on the findings of the initial pilot study.

The 26 student output items were closed-ended 5 point Likert-scale with responses ranging either from 'strongly agree' through to 'strongly disagree' or from 'very high' through to 'very poor'. The student output part measures were presented under 3 categories or themes: student democracy, evaluation of teaching and learning and quality of academic and non-academic services.

Sampling

The study involved five of seven universities surveyed for a larger scope study. Except for one Francophone university which declined to participate in the study, these five institutions were the only establishments officially recognized as 'universities' by the Lebanese government following the Anglophone or Francophone educational model. The two universities excluded from the study did not follow the Anglophone or Francophone

educational model. To gain access to the university, letters were mailed to the presidents of each institution. The letters indicated the description and scope of the project and the assessment instrument to be used in the study. Universities responded in a period of two months.

A stratified sampling procedure was used to select students. The strata were the departments and about 10 students from each stratum were used for the sample. Sampling of students stopped at 210. In total there were 1050 students selected from the five universities for this study. The selection was made so that students from all the various departments in a university were surveyed. Not all students responded to all the questions.

RESULTS

Table 1 reports the satisfaction levels of students in both Anglophone and Francophone universities. No differences were found between the institutional types in relation to the extent to which students were involved in institutional decision-making at both the academic and non-academic levels. Anglophone institutions more than the Francophone institute however promoted the teaching of democratic ideals through the open and free discussion of political, social and religious issues in courses.

In terms of teaching and learning the results indicate that students in Anglophone universities expressed greater satisfaction in the quality of the university than those in the Francophone institute. Particularly, students in Anglophone universities felt that the university has set standards to perform academically more than the Francophone university. In addition, students in Anglophone universities believed that the method of instruction was innovative with the use of modern technologies. A setback however was the larger class size in the Anglophone universities.

Several other features clearly distinguished the Anglophone educational model from the Francophone model. First, Anglophone patterned universities tend to support course work choice and flexibility essential for maintaining a liberal arts education. Second, students in Anglophone universities indicated that the courses were designed to encourage student participation in projects and research activity. Finally, students in Anglophone universities enjoyed more opportunities of instructional assistance beyond the confines of the classroom both with the instructor and with their peers.

On the satisfaction measures students in the Francophone university seemed more satisfied with the library resources in comparison to those in the Anglophone universities. No differences were found in relation to student satisfaction with other aspects of academic services as electronic resources, labs and equipment. In terms of non-academic services the Anglophone universities surpassed the Francophone university in most aspects such as extra curricula activities, recreational services and student services including housing, food and health services.

Table 1: Mean Satisfaction Levels of Students

Statement	A	F	t-test
1. Sudent bodies play an important role in the decision-making process with regards to various academic functions a the University.	3.08 1.35	2.91 1.36	1.63
2. Sudent bodies play an important role in the decision-making process with regards to various non-academic functions of the University.	3.47 1.29	3.52 1.09	-0.46
3. Students are clearly informed at the beginning of each course of the evaluation procedure to be followed.	4.00 0.96	3.88 1.07	1.65
4. The University has set standards at which participants are to perform academically.	4.18 0.81	3.95 1.02	3.49*
5. Professors may in general be considered competent.	3.75 1.04	3.99 1.02	-2.98*
6. Professors mainly use the traditional lecturing approach (teachers talk and students listen) in their teaching.	2.75 1.17	2.64 1.22	1.26
7. Professors use a variety of teaching learning approaches in a course such as the lecturing approach, the inter-active discussion approach.	3.84 1.17	3.43 1.23	4.50**
8. Professors use modern technologies in their teaching.	3.67 1.02	3.35 1.21	3.93*
9. Classes, in general, are too large to allow for effective teaching and learning.	3.22 1.31	3.84 1.18	-6.27*
10. Courses are designed in a manner that allows all issues (social, political, religious, etc.) to be discussed openly.	3.40 1.11	3.06 1.29	3.84*
11. Courses are designed to encourage student participation in projects and research activity.	3.74 0.97	3.31 1.20	5.45*
12. The curriculum is designed in a manner that ensures students get practical experience related to their education.	3.47 1.18	3.52 1.15	-0.57
13. Students have a wide range of elective courses to choose from.	3.23 1.30	2.33 1.46	8.74*
14. Professors set specific office hours to allow individual students or small groups of students to obtain additional instruction or assistance in their courses outside regular class sessions.	3.88 1.04	2.67 1.57	13.41*
15. Academically excellent students (teaching assistants) provide instruction for students with weaknesses in certain areas under the supervision of faculty advisors.	3.41 1.47	2.84 1.57	4.98*
16. As a student you progressed through your field of study towards graduation with few problems as failing or withdrawing from courses or as in changing your major.	3.57 1.34	3.58 1.33	-0.10
17. Student evaluation of the teaching performance of instructors is very important to the instructor.	3.49 1.29	3.62 1.27	-1.28
18. Student evaluation of the teaching performance of instructors is very important to the administration.	3.58 1.33	3.46 1.50	1.06
19. The level of resources in the library/libraries is	3.69 1.12	3.96 0.98	-3.22*
20. The level of access to electronic resources through online databases is	3.64 1.18	3.65 1.21	-0.07

21.The ease of access to the internet for educational and research purposes is	3.63 <u>1.21</u>	3.70 <u>1.28</u>	-0.77
22.The standard of computers in the labs you have access to in your course of study is	3.55 <u>1.20</u>	3.63 <u>1.25</u>	-0.89
23. The standard of equipment in the various laboratories you have accessed through your course of study.	3.73 <u>1.21</u>	3.75 <u>1.31</u>	-0.27
24.The standard of extra curricula activities and clubs is	3.39 <u>1.29</u>	2.61 <u>1.24</u>	7.82*
25.The standard of student services (such as housing, food services, health services etc.) is	3.40 <u>1.32</u>	2.90 <u>1.30</u>	4.86
26. The standard of recreational facilities (such as gym, sports grounds, etc.) is	3.32 <u>1.40</u>	2.72 <u>1.30</u>	5.55

A: Anglophone universities; F: Francophone universities

DISCUSSION

A priority of higher education is to teach democratic ideals and to teach the working of democratic ideals in an environment that is conducive to student learning and growth (Love and Miller, 2003). One way to achieve this is through empowering students to assume an active role in institutional decision-making. No difference was found between the universities in the extent to which they involved students in the decision-making process and in giving them some ownership of the educational process; however 'student voice' was more readily heard in relation to non-academic functions as compared to academic functions. Variations between the two institutional types in the implementation of democratic practices were found in relation to course design in that Anglophone more than Francophone institutions permitted for the free and open discussion of all political, religious, and social issues.

Generally, universities in the Lebanon seem to be falling short of fulfilling their mission which is to promote the awareness of human rights among citizens and to encourage the respect for fundamental freedoms for all without distinction. A rationale for the findings may be found in Davies' (2000: 2) claim that '…firm national systems for pupil voice …. are part of a mature democracy that ensures rights and responsibilities for all its citizens and subjects of whatever age'. Both the Anglophone and Francophone institutions however are not embedded in a mature but rather an ailing democracy as that of the Lebanon struggling to survive in the compelling authoritarian structures of political rule of the surrounding Arab countries. The high level of statist coercion in these Arab countries has stifled the emergence of democratization processes and practices. In such an environment, another element of concern would be the counterproductive effects resulting from giving pupils a voice 'if such voices are ignored or incorporated into structures where …the impact is not felt' (Davies, 2000: 7).

'Democracy can only flourish with strong supportive institutions and laws, and a pervasive democratic culture, which encompasses democratic values, ways of knowing and acting, ethical judgments, analytical competencies, and skills of engagement' (Directorate General IV: Education, Culture and Heritage, Youth and Sport of the Council of Europe 2006: 2). Education, particularly higher education, is considered a

decisive force for shaping the democratic development of societies. When institutes of higher education are embedded and surrounded by an authoritarian, patriarchal culture that is a heritage of Arab societies however, prospects of a democracy are appreciably hampered. Institutes adopting the Anglophone and Francophone educational systems where the teaching of democratic principles and their workings or processes is an integral constituency of the system have not been able to escape completely the overarching reach of the Arab culture. A Lebanese political scientist notes, 'a democratic government needs a democratic political culture, and vice versa' (Harik, 1994: 56). Along similar lines it seems plausible to conclude that a democratic educational system is effectively sustainable in a culture that endorses the legitimacy of democracy.

Differences between the two institutional types did appear in terms of the evaluation of teaching and learning experiences. Distinguishing features between the two educational models found to be more pronounced in Anglophone institutions were: first, set standards at which participants had to perform academically; second, the flexibility and support of course work choice essential for maintaining a liberal arts education; and finally, course design that encouraged student participation in projects and research activity. The active involvement of staff members in research - considered in most Anglophone patterned universities as a basic component of staff members' job descriptions and essential for promotion and progression in rank – facilitates its incorporation in course design and in turn student involvement in such research activities and projects. Scott (1988) argues that for students to develop the ability to think critically and independently they need to be taught by active not passive spectators in their discipline.

In the Francophone university, although the research activity of academic staff was highly appreciated, excellence in teaching seemed to be the sole basic component of faculty members' job descriptions and to some degree a sufficient requirement for progression. Ultimately such weak involvement on the part of academic staff members in research projects will reflect to some extent on the design of courses and the skills acquired by students, as claimed by Volkwein and Carbone (1994). In a study they conducted at a public research institution, students were found to exhibit greater academic integration and intellectual growth in departments that rated high on both research and teaching. An obligation of the university to students, which is the development of intellectual independence, is thus lacking. Regardless, most students expressed satisfaction with the education they are obtaining, possibly since they have not been exposed to more liberal forms of learning whereby firstly students are actually involved in the creation of knowledge by participating in research and project activity rather than merely being recipients of knowledge and information and secondly whereby through its regular programmes and the extra curricular activities students develop skills and competencies in areas they find personally interesting and rewarding. On the other hand, while the integration of research in curriculum and course design seemed to be a distinguishing factor among universities, the incorporation of technical or experiential components in curriculum design did not.

A characteristic of the teaching learning process more clearly associated with the Francophone educational model than the Anglophone model is the limited possibilities for individual students or groups of students to seek additional instruction or assistance outside regular class sessions either by instructor him or herself or by their peers. Such a characteristic of an educational system that limits the teaching/learning process to the

classroom sets the professor on a pedestal, distancing him or her from the students and thus limiting possibilities for student-staff interaction and the exchange of information and ideas that could prove essential for effective learning. In a study conducted by Terenzini and Pascarella (1980), they found that while not all types of informal student-faculty contact were of equal importance, those that involved the discussion of intellectual matters had more impact on academic achievement. Faculty members thus do play a significant role in the academic achievement skill development of students, a role that as noted by Terenzini, Theophilides, and Lorang (1984) need not be confined to the classroom. As there is substantial research evidence to suggest that the active engagement of students and faculty members in the teaching/learning process fosters critical thinking and student learning (Kember and Gow ,1994), it would seem that attention should be given to this 'arena of social interaction' (Howard, 2002: 764) which encourages openness, competition, pluralism and tolerance of differences, fundamental requirements of a democracy.

The Francophone institution shares with the Anglophone institutes quality of academic services. The standard of extra curricular activities and student services such as housing, food and health services in Anglophone modelled institutions however surpasses that of the Francophone university. These findings reflect to some degree the concerns of management at the Francophone university with the knowledge formation of students rather than their total mental and physical development, while in contrast the President of a historically grounded Anglophone institute claimed in the University bulletin (AUB, 2004) that such provision was the thing 'that sets us apart'. The distinctiveness of the Anglophone universities is in their academic and student affairs bodies. It is these bodies that represent a distinctive quality attribute of Anglophone universities, thus providing a competitive edge over other universities in the Lebanese higher education market. The Anglophone universities and particularly the historically grounded universities have a long tradition of encouraging social and secular progressive ideals of human life and both attend carefully to maintaining this culture in their campus life.

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A WORLD CLASS PUBLIC RESEARCH UNIVERSITY IN THAILAND AND ITS SUCCESS STORIES

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ABSTRACT

The paper continues to study an institutional research on strategies towards the world class universities of Thai Higher Education Institutions (Kampechara, 2006). This study expanded dynamic changes of the world class universities rankings. The study aims to explore the positioning of Chulalongkorn university, a world class public research higher education institutions in Thailand. The study also proposes Chula's success stories. The research processes were focused on content analysis of the current updated to data and information, participation in Chula's national and international conferences, annual events, and so on. Direct observation, eavesdropping, computer search through internet, analytic induction, conceptual mappings, and descriptive statistics are the tools of the methodologies of the studies. The results of the studies; Chulalongkorn university identities are to remain public research university and plan to be autonomous university continuously, strong   outreach and truly internationalization, excellence in cultural dimensions, good governance and integrity, enhancement of strategic initiatives on continuous quality improvement for sustainable development.

Key words: World class university, success stories, public research university.

INTRODUCTION

Ongoing studies the strategies towards the world class universities of Thai higher education institutions (Kampechara, 2006). The author expanded the study on the situations and success stories of a Thai world class public research university, Chulalongkorn university for its continuous quality improvement towards the prestigious university in the world.

LITERATURE REVIEW
Views on world class universities

Nilland (February 3, 2000) concluded a public lecture on the challenge of building world class universities (WCUs) in the Asian region . He states that…For universities, world-class standing is built on reputation and perception often seen as subjection and uncertain and it requires outstanding performance in many events; 1) the top of my list is quality of faculty   2) research reputation is critical 3) important of a talented undergraduate body 4) international presence 5) proper resource is an excellence issue   6) the leveraging effect of alliance and networks 7) WCUs embrace many disciplines 8) WCUs will be technology smart 9) WCUs will practice the art of good management.

Liverpool (April 20, 2005) indicates that Virginia Tech certainly aspires to be and is capable of becoming a world-class university. There are seven elements to a strategic model - 1) internationalization the curricula 2) increasing student exchanges 3) increasing the number of international students 4) implementing faculty development and exchanges

5) utilizing information technology 6) collaborating with external constituents, and 7) advancing international development.

Levin,et.al.,(2006) note that, in general there is wide agreement that great universities have three major roles 1) excellence in education of their students 2) research, development and dissemination of knowledge, and 3) activities contributing to the cultural, scientific, and civil life of society.

The university of Kansas team (2006) quoted to the speech of their Chancellor, " Hemenway's 10 points for a great university ": 1) A great university welcomes all peoples, respecting their differences; while teaching tolerance for each human being, a great American university demonstrates the value of a democratic way of 1ife, thereby ensuring a democratic future 2) A great university creates new knowledge of the world and its peoples, its capacity for research a manifestations of its belief that the discovery of new knowledge ensures a better future 3) A great university believes in the sanctity of the relationship between student and teacher' the sharing of knowledge in the communion of resulting in the best possible hope for human progress 4) A great university recognizes its obligation to contribute to an educated workforce for the society that supports it, particularly responding to labor shortages as they occur in that society. 5) A great university serves the society that supports its, helps to ensure food shelter, and health care for all people. it supports a self-sustaining natural environment, the perpetuation of public education, an affordable health care system, and economic well-being. 6) A great university   is an international university , one whose programs have an impact on the entire world because its faculty think beyond 1ocal and national borders, and its students understand the inter-relatedness of a world where ideas and capital flow easily across geographical borders. 7) A great university recognizes the wisdom of investing in the human development of the work force, so that each employee is able to pursue personal and professional goals without institutional obstacles. A great university has no glass ceiling. 8) A great university recognizes the physical legacy that it passes to the generation who will work and study there in the future and therefore maintains, preserves, and enhances its facilities and physical setting. 9) A great university recognizes its responsibility to conserve the public and private monies that enable it to educate, research and serve. The public trust that accompanies those funds demands that they be allocated so as to achieve maximum efficiency and effectiveness. 10.) A great university is one that has identified its priorities and planned with sufficient intelligence to ensure that those priorities receive the resources necessary for their accomplishment.

Carcia (2002) proposed the three pillars of world class public universities: 1) devotion 2) accountability, and 3) funding

Views on university rankings

University rankings are popular in the world. The rankings are the external assessment to find out the quality of the colleges and universities. The rankings are useful for the stakeholders and clients for their seeking of knowledge and upgrade the quality of life.

The prominent key themes, as basis for comparisons world class higher education institutions are teaching quality, research quality, graduate employability, and international

commitment (Ben Sowter, 2007). These factors are ranked by THES – QS world university rankings.

Shanghai Jiao Tong University (SJTU 2006, cited in Nian Cai Liu, 2007) initiated academic ranking of world universities by ranking criteria: 1) quality of education: the indicator of alumni of an institution winning Nobel Prizes and Field Medals 2) quality of faculty: staff of an institution winning Nobel Prizes and Field Medals; highly cited researchers in 21 broad subject categories 3) research outputs: the article published in Nature and Science, and articles in Science, Social Sciences, Arts and Humanities 4) size of institution: academic performance with respect to the size of an institution.

Newsweek International (August 13, 2006) devised a ranking of global universities that takes into account openness and diversity, as well as distinction in research. Newsweek's evaluation the universities in the world by using some of measures used in THES survey. Fifty percent of the score came from equal parts of three measures used by Shanghai Jiao Tong (Academic Rankings of World Class Universities – ARWC); the number of highly – cited researchers in various academic fields, the number of articles listed in Nature and Science, and the number of articles listed in the ISI Social Science and Arts & Humanities. Another 40 percent of the score came from equal parts of the four measures used by the THES: the percentage of international faculty, the percentage of international students, citations per faculty member (using ISI data) and the ratio of faculty to students. The final ten percent came from library holdings (number of volumes). The league table has shown the top 100 global universities (Newsweek, Inc. 2007).

There are some specialized of world university rankings. World Education News and Reviews WES (2006) concluded the international rankings by internet presence, 1) Webometrics rankings by internet presence, 2) university metrics "G - Factor"; and 3) 4 international colleges and universities.

For the national level of rankings and ratings, there are popular in many countries use the rankings and ratings colleges and universities for informing undergraduate and postgraduate choices, identifying prominent disciplines, identifying top research universities both private and public higher education institutions, identifying the best value of HEIs and the other maintenance functions for quality of life of stakeholders and global communities.

METHODOLOGY
The basic aims of the study included
1) To explore the positioning of Chulalongkorn University from the resource of rankings and assessment
2) Proposed Chula's success stories as a world class public research university in Thailand.

The above research goals were addressed by content analysis of relevant documents, analyzed to active participation, direct observation eavesdropping, and computer search through internet. Descriptive Statistics, analytic induction and conceptual mappings were used in the studies.

Positioning of Chulalongkorn university: Success stories positive images in public arena

In general, higher education in Thailand are under governmental control, The Thai higher education system comprises of 78 public, 62 private, community colleges 17 institutions, which are under the supervision of Commission on Higher Education (CHE), Ministry of education (MOE). (CHE, 2006). Amongst the public universities in Thailand, there are the limit number of highly research universities. The top ranks public research universities are: Chulalongkorn University, Suranaree University of Technology, King Mongkut's University of Technology Thonburi, Mahidol University, Chiang Mai University and the top ranks of teaching: Chulalongkorn University, Khon Kaen University, Chiang Mai University, Mahidol University (CHE ranking of teaching and research universities, 2005)

The Second round of university external assessment of Thai higher education system (2006-2010), released by the Director of ONESQA. (Somwung Pithiyanuwat, cited in (Bangkok Post May 22, 2007). The second round utilizes the following standards: 1) Quality of graduates 2) Research and innovations 3) Academic services 4) Arts and culture preservation 5) Organization and human resources development 6) Curriculum and instruction, and 7) Quality assurance system.

Table 1: The preliminary results of Thai universities external assessment (2006-2010)

Category	Level of Quality					Certi fied	Percen tage Certi fied	Certi fied Condi tionally	Not Centi fied
	2.00	3.00	4.00	5.00	Total				
Government Universities	1	5	16	2	24	18	75.00	5	1
Private Universities	7	35	11	1	54	12	22.22	35	7
Rajabhat Universities	1	16	23	1	41	24	58.54	16	1
Rajamangala Universities	8	26	4	-	38	4	10.53	26	8
Specialized Universities	2	26	63	2	93	65	69.89	26	2
Community Colleges	2	7	1		10	1	10.00	7	2
Total	21	115	118	6	260	124	47.69	115	21

Source: Bangkok Post 22 May 2007

Table 2 : The results of Chula's external assessment

Standard and Criteria	Mean	Results
Quality of graduates	4.25	good
Research and innovations	4.60	very good
Academic services	5.00	very good
Arts and culture preservation	5.00	very good
Organization and HR Development	5.00	very good
Curriculum and instruction	4.70	very good
Quality assurance system	4.70	very good

Source : Oral reports of ONESQA-External assessors at Chulalongkorn University (November 16, 2006) in Charmchuree Building Hall 4.
Scalar weighting : Weak 1 2 3 4 5 Very good

The results of Chula's second round of external assessment has shown in the table 2

The results of academic groups assessment : Health Sciences (4.68) Engineering (4.71), Education(4.53), Arts (4.51), Physical & Biomedical Sciences (4.53), Interdisciplinary (4.52), its shown the very good academic clusters. Some academic clusters are good: Architecture (4.30), Administration, Accountancy, Tourism, and Economics (4.26) Humanities and Social Sciences (4.26)

Reflections from international rankings
Table 3 : Scores of factors from the league table (THES, 2006)

WCUS / Factors	Harvard	Cambridge	Melbourne	Kyoto	Chula
Peer reviews 40%	93	100	72	61	33
Recruiter reviews 10%	100	79	44	20	18
Int'l Faculty score 5%	15	58	51	15	9
Int'l students score 5%	25	43	36	7	1
Faculty Students score 20%	56	64	25	44	33
Citations/Faculty score 20%	55	17	7	18	0

THES-QS Rankings The World's Top 200 Universities The position of Chula has shown in the Table 3 and Figure 1.
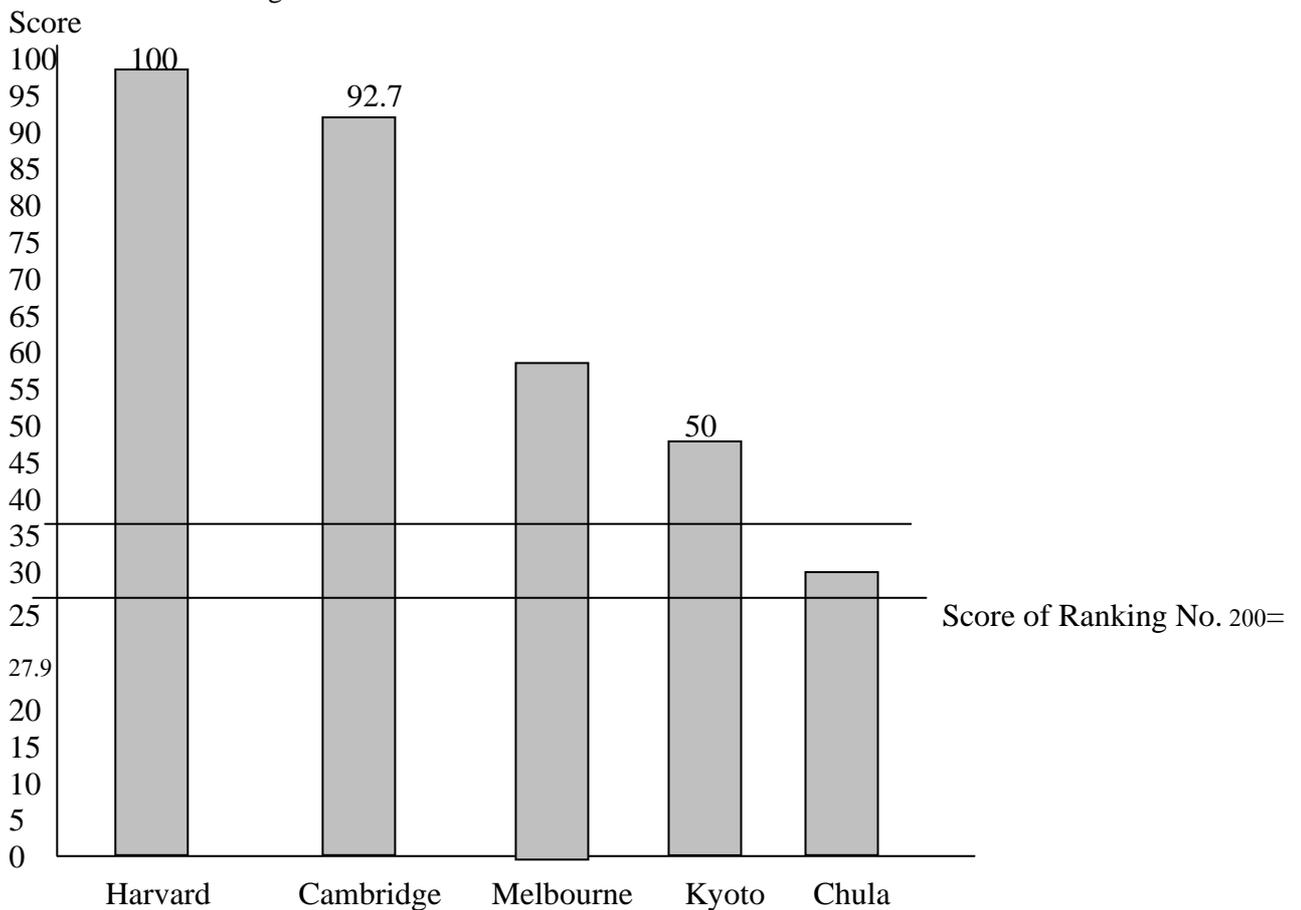
Figure1: Comparisons the samples of   WCUs overall weighting scores.
Source: League table (THES, 2006), Analyzed by researcher.

Chula's ranking number in league table is 161 out of 200 universities in the world. The weighting score is 31.2 out of 100, and the median of 200 universities is 36.3. The position of Chula is below the median.(Figure1).

The score of subject area in THES-QS 2006 ranking of Chulalongkorn university: Arts and Humanities (27.10, ranking number 104), Engineering & IT (31.44, ranking number 100), Life Science and Biomedicine (29.19, ranking number 82), Nature and Science (24.04, ranking number 145), Social Sciences (37.45, ranking number 46) (THES-QS 2006. cited in Ben Sowter, February 12, 2007).

The other rankings, i.e. Webometrics ranking, Chula is ranked the top university in the nations. Chula's SASIN Graduate school is also an outstanding business school in Asia. SASIN Business School is popular for the international students.

Chula's success stories : outlooks, outreach, outright self- esteem

Since 2007 marks the auspicious 90th anniversary of Chulalongkorn, strings of celebratory events and activities have been scheduled, i.e. national and international conference, academic outstanding performances, the exhibitive and activating of the faculties, institutes, centers of excellence and many success stories to collect and pool the knowledge and wisdom which align to the mission, vision, core values, and strategies. The Think Tank higher education institution of the nation and international. Growing self-esteem of primary functions, and enhancement of maintenance factors of strong leadership, talent management, green campus, prominent learning facilities.

Selected some data and information of Chulalongkorn university

Chula's Statistics
- Faculty Stats
  Number of Faculty Members 3,190
  Number of
  International
  Faculty Members   183
- Students Stats
  Number of
  Undergraduates   21,457
- Number of
  International
  Undergraduates   36

Postgraduates Stats
- Number of
  Postgraduates   12,595
- Number of
  International
- Postgraduates   227
Course Fees (subject to change)
  Average Course Fees
  - Undergraduate $8,145
  - Postgraduates $9,402

Source: World University Rankings 2006 (QS & The Times Higher Education Supplement), and URL: www.topuniversities.com

Current updated as the academic year 2007 (www.chula.ac.th)
- Number of under-grad students 22,722
- Graduate students 12,869
    - Grad Diploma 245
    - Master 10,373
    - Higher Grad Diploma 383
    - Doctorates 1,868

- International programs 69 out of 418 regular programs, PhD Int'l programs 18
- MOU : more than 380 contracts with HEIs and inter-organizations more than 40 countries

Specimens of recent success stories
1) An outstanding good governance model of public research university.
   The Office of Public Sector Development Commission (OPDC), reported the evaluation results of governmental agencies for the fiscal year 2006. As for the assessment on four dimensions of the university's operational plan:

   The dimension of effectiveness of operational plan (55%) Chula received 4.80, quality service (15%), Chula received 4.80, efficiency of operational plans (10%) Chula received 2.88, and organization development (20%), Chula received 5.0. An overall weighting score 4.65 out of five scales.
2) A team of Chula's engineering students win the second prize in the Robocup Soccer Small Size League, which is part of the World Robocup 2007, held in Atlanta, USA.
3) Chula's Halal Science Center, has been named the recipient of the Halal Journal Award (published in Malaysia) of Best Halal Industry for 2006.
4) A medical research team of Chula found the new treatment of elephantiasis. And conducted research in Avian Flu, HIV/AIDS which are prominent in the ISI standards of citations.
5) On the anniversary day, Chula's organized leading lectures of "Learning from His Majesty the King's Works." A series of lectures focused on the topic "Sufficiency Economy, Learn from Direct Experience." From this set of lectures will follows: 1) Economic Directions 2007: To sustainable success, 2) Educational Management to Achieve National Development, 3) Mass Media and Social Responsibility, 4) Organization Development and Good Governance, 5) Writers work to reflect society or develop society? 6)Thai Public Health System Development, 7) What does Thai architecture teach Thai society? 8) Logistics-Transportation and Environmental-friendly Power Conservation, 9)Pathway to Rural Areas Development, 10) Chulalongkorn University and Bangkok Development, is a conference that will highlight more than 300 Chula research works with emphasis on the university's involvement in community development, 11) International Conference on "The 8th ARPU Distance Learning and Internet Conference."
6) Chula's Continuing Education Center is and outstanding initiatives and shown success stories of life long learning for all.
7) Other special events and activities are performing during Chula's 90th Anniversary.

CONCLUSION, DISCUSSION, AND SUGGESTIONS
1) Chula's identities are to remain a royal university with the core values in the words of king Chulalongkorn, "All of our subjects, from our royal children down to the lowest commoners, will have the same opportunity to study by they royals, nobles or commoners.
2) Chula remains a public research university, Doctoral/Research-Extensive with match to the Carnegie Classification of Institutions of Higher Education for the

advancement of teaching (Shulman, 2000 Edition). Chula motivates faculty members for their publications and citations in all fields of academic clusters.

3) Quality assurance system is the success stories tools and maintenance factors. Total quality management is an ongoing process continuously to promote Chula a better world class university.

4) Chula is located in the central and vibrant atmosphere of business center in Bangkok, an outstanding logistic and transportation, the rich of real estates. Its appropriate to re-organize a new model of autonomous and entrepreneurial university with the good governance and integrity.

5) The strategies to attract talents of faculty numbers and students world wide are a must and merit selection by portfolio assessment of output-based performance. Post-doctoral scholarships of the strength international programs should be initiated.

6) A strong partnership with the universities in ASEAN+3, United Nations Universities, promotion of global skills of Chula's communities, partners, and alumni worldwide.

7) enhancement the initiatives of peace and reconciliation, integrity, democratic way of life, civic education, and professional development for K-16 instructors, and life long learning are the core missions and values for sustainable development of the nation and internationalization.

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MORE current updated to data and information of Chulalongkorn University
URL: www.chula.ac.th

SUB-THEME:

II. TOTAL QUALITY ASSURANCE

THE APPLICATION OF DATA ENVELOPMENT ANALYSIS (DEA) MODEL TO MEASURE EFFICIENCY AND PRODUCTIVITY CHANGE IN HIGHER EDUCATION INSTITUTIONS: A CASE STUDY OF UNIVERSITI TEKNOLOGI MARA (UITM), MALAYSIA

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ABSTRACT

Efficiency and productivity assessments are important activities in any organization including higher education institutions (HEIs). These activities are done specifically for performance evaluation and benchmarking purposes. Assessing how well the higher education institutions perform in their operation is crucial in terms of making these institutions more accountable in receiving public money by providing 'value for money' services. Many advanced methodological approaches have been developed and employed in order to assess the performance of such organizations. This study uses data envelopment analysis (DEA) and a distance function approach to derive Malmquist productivity indexes for 15 faculties and 10 branch campuses of Universiti Teknologi Mara (UiTM) over the period 2000 to 2005. The results show that over the period of the study, UiTM has experienced an annual average increase in productivity of 19.9%. On investigating the components of this productivity change, however, it becomes apparent that UiTM has enjoyed an annual average increase of 32.5 % in technology change but a decrease in technical efficiency of 10.4%. In general, the results imply that the productivity growth is due to technological change only.

Keywords: Efficiency, productivity, data envelopment analysis

INTRODUCTION

Higher education institutions (HEIs) play a very important role in a country's development. These institutions stimulate the country's economic growth by generating spill-over effects from teaching and academic research (Audretsch et. al., 2003 quoted by Warning, 2004). In higher education, students are equipped with various skills and vast knowledge, through teaching, to prepare them in becoming intellectual human capital. Meanwhile, research activities conducted in higher education generate new knowledge for technological advancement, which has been recognized as an essential requirement for a country's long term growth and competitiveness (Abbot and Doucouliagos, 2004).

The importance of HEIs to the development of the country has been exemplified in the way how policy makers allocate public funding in public sectors. HEIs receive substantial amount of funding from the taxpayers. For example, in the case of Malaysia,

based on the figures in 2006 Budget, RM1.4 billion (equivalent to 1% share of public spending) has been allocated for HEIs. In making higher education institutions more accountable in receiving public money, the performance of these institutions need to be assessed (Johnes, 1996). One way of ensuring that the money spent is worthwhile in this sector, is to calculate and to publish the performance measures of higher education institutions. Efficiency and productivity are two selected performance measures that could be calculated to reflect the performance of an organization.

Efficiency measures simply reflect how well a set of resources are being translated into a single product or multi products through a production process (Johnes, 2005) while productivity is simply the ratio of total output produced over the overall level of input being used. Varieties of methodologies have been developed for efficiency analysis. The state of the art frontier efficiency methods concern more on measuring efficiency based on the notion that efficiency is measured relative to a set of best practice institutions at a specific point in time. Data Envelopment Analysis (DEA) provides a non parametric frontier methodology for evaluating the efficiency of multiple homogenous decision making units (DMU) that produce several outputs with a variety of inputs source.

Although there have been many efficiency studies using DEA in the higher education sector, only a few studies examine efficiency and productivity over time. Evidence emerging from these studies indicated wide prevalence of technical inefficiency in higher education institutions at university or academic department levels. To date, no studies of efficiency and productivity for Malaysian universities have been published. UiTM was first established as a training college in 1956 and was only awarded the university status in 1999. As it receives grant from the government, it is thus vital to assess the efficiency of UiTM to gauge the university's performance in utilizing the resources in producing graduates and research outputs.

The objective of this research is to assess the efficiency and productivity of faculties and branch campuses of UiTM during the period 2000-2005, taking into account the changes in efficiency and technology. This research results is valuable to the university in terms of providing a monitoring mechanism for performance efficiency, performance set target and resource allocation. The remainder of the paper is organized as follows: Section 2 reviews the literature on efficiency studies in HEIs using panel DEA models, Section 3 discusses methodology and presents data, Section 4 discusses the results and finally, Section 5 summarizes the findings and presents the conclusions.

LITERATURE REVIEW

There have been many efficiency studies using DEA in higher education sector using cross-sectional data but only a few studies examine efficiency and productivity over time i.e by using panel data (Abbot and Doucouliagos, 2001; Flegg *et al*., 2004; Carrington *et al*., 2005; Worthington and Lee, 2005 and Johnes, 2006). A cross-sectional efficiency only provides a snap-shot of the performance of a DMU in the time period of interest. Panel data analysis is possible when several observations for each DMU in the sample are available over several time periods. Since the presence of the time dimension in data introduces a new variety of ways of evaluating the efficiency of observed productive behavior, results are more reliable and therefore appropriate for decision making purposes.

All of the studies above used Data Envelopment Analysis (DEA) based Malmquist Index (MI) to measure the efficiency and productivity changes over time. DEA based MI is an index that measures the productivity change of a DMU between two time periods which is sometimes also referred to as the Total Factor Productivity (TFP) index. DEA based MI was developed to allow for disentangling inefficiency effects and technological changes. The reasons for choosing DEA based MI are numerous. Among them are: (1) MI can be decomposed into two components for explaining the productivity sources, namely, technological change and technical efficiency change; (2) MI does not require price data; (3) MI can accommodate multiple inputs and outputs; and (4) MI does not make any restrictive value/or behavior assumptions for economic units such as cost minimization or profit maximization.

Previous Efficiency studies using DEA based Malmquist Index

There are numerous recent papers on panel efficiency studies using DEA based MI. Abbot and Doucouliagos (2001) investigated the efficiency and productivity of Australian colleges of advanced education for the years 1984 to 1987 using the DEA based MI. The results indicate that these colleges recorded modest growth in technical change and total factor productivity, but did nor fare all that well in terms of growth in technical efficiency during the study period. As a group, however, the colleges had attained high levels of technical efficiency. Worthington and Lee (2005) examined the change in productivity in Australian universities between 1998 and 2003. Using the MI, the annual productivity growth averaged 3.3% across all universities, ranging from 1.8% to 13% which was largely due to technological progress. A study by Carrington *et al*. (2005) measured productivity growth of thirty-five universities over the 1996- 2000 period. Their findings are consistent with those of Worthington and Lee (2005) where technological change is found to be the main contributor in the productivity growth.

Flegg *et al.* (2004) examined the technical efficiency of 45 British universities in the period 1980/81 to 1992/93 using data envelopment analysis. The DEA based MI was used to reveal total factor productivity which rose by 51.5% between the interest periods. Further analysis revealed that most of this increase was due to a substantial outward shift in the efficiency frontier during this period. Johnes (2006) used the DEA based MI to compute productivity indices for 113 English higher education institutions over the period 1996 to 2003. The analysis revealed that HEIs in England experienced an annual average increase in TFP of 1.5% and this was mainly due to the increase in technology (1.5%) rather than efficiency change (-0.8%).

METHODOLOGY

Data envelopment analysis

The DEA methodology was initiated by Charnes *et al.* (1978) who measured efficiency based on the frontier production function. The frontier is defined as a set of best obtainable positions as a locus of constrained maximum or minimum values. A firm which operates on the production frontier is said to produce its potential or maximum output by following the best practice techniques given the technology. Generally, when an education production process involves several inputs and outputs, the efficiency can be defined as follows:

$$\text{Efficiency} = h_0 = \frac{\sum Weighted \ Sum \ of \ Outputs}{\sum Weighted \ Sum \ of \ Inputs} = \frac{\sum w_j y_j}{\sum w_i x_i} \ \text{------------------------ (1)}$$

The problem with the above definition is in the choice of weights. The DEA solves this problem by introducing a particular weighting system for every single DMU. Charnes *et al.* (1978) proposed that the maximum of efficiency value for a DMU k_0 can be calculated by solving the following:

$$\max_{w,v} h_0 = \frac{\sum_{j=1}^{n} w_j y_{jko}}{\sum_{i=1}^{m} v_i x_{iko}} \qquad \text{----------------------------------- (2)}$$

subject to

$$\frac{\sum_{j=1}^{n} w_j y_{jk}}{\sum_{i=1}^{m} v_i x_{ik}} \leq 1 \quad k = 1, \ ....., z \qquad \text{-------------------------------- (3)}$$

$$w_j, \ v_j \geq \varepsilon \qquad \text{------------------------------- (4)}$$

Where

Z = number of units;
m = number of inputs;
n = number of outputs;
w_j = weight given to output j;
v_i = weight given to input i;
ε = a small positive number.

This model maximizes the ratio of the weighted output to weighted input of the k_0th DMU with the constraint that no institutions should have efficiency ≥ 1 and no weights are negative. The efficiency of the k_0th DMU will either equal to 1, in which case it is efficient relative to the other DMUs, or will be less than 1, in which case DMU is inefficient. DEA models can be divided into output oriented models and input oriented models. DEA also solve linear programming problems for each technology satisfying both constant returns to scale (CRS) and variable returns to scale (VRS). Constant/variable returns to scale and input/output combination convexity are common assumptions.

DEA Based Malmquist Index

An extension of the DEA method is to apply MI to panel data in order to evaluate the productivity change of a DMU between two time periods. This technique, known as DEA based MI was first introduced by Malmquist (1956) and later developed by Fare *et al.*

(1994). This technique decomposes productivity growth into two components: changes in technical efficiency over time (TEC) and shifts in technology over time (TC). Technological progress results from the advanced technology embodied in capital and is represented by the outward shifts in the production frontier over time. Technical efficiency on the other hand, results from the efficient use of technology and inputs (due to the accumulation of knowledge in the learning process, diffusion of technology, improved managerial practice, etc.) and is represented by movements towards the best-practice frontier.

DEA based MI uses four steps to determine the changes in total factor productivity. First, DEA method is used on a sample data to derive the production frontier to evaluate the technical efficiency of each DMU. Second, the production frontier is allowed to shift over time due to technological. Third, technical efficiency change for one year relative to the prior year is computed. Lastly, MI is computed to denote the total factor productivity change, which is the product of technical efficiency change and technological change.

A diagrammatical illustration is given in Figure 1 where a simple one input and one output production frontier is presented. The diagram depicts two production frontiers of a DMU that uses inputs at X_s and X_t in period s and t to produce outputs, q_s and q_t. In each period, the DMU is operating below the frontier for that period. Hence, there is technical inefficiency in both periods. The respective measures are computed as follows:

Technical Efficiency changes = *changes in efficiency from one year relative to prior year*

$$= \frac{q_t/q_c}{q_s/q_a} \qquad \text{--------------------------}$$

---- (4)

Technological change = *frontier shifts over time*

Technological change (period t) =

$$\frac{\textit{efficiency of } (\textit{xt, qt}) \textit{ w.r.t. the frontier in period s}}{\textit{efficiency of } (\textit{xt,qt}) \textit{ w.r.t. the frontier in period t}}$$

$$= \frac{q_t/q_b}{q_t/q_c} = TC_t \qquad \text{----------------------------}$$

-- (5)

Technological change (period s) =

$$\frac{\textit{efficiency of } (\textit{xs, qs}) \textit{ w.r.t. the frontier in period s}}{\textit{efficiency of } (\textit{xs,qs}) \textit{ w.r.t. the frontier in period t}}$$

$$= \frac{q_t/q_b}{q_t/q_c} = TC_s \qquad \text{-----------------------------}$$

- (6)
Therefore,

$$\text{Technological change} \quad = \quad [(TC_t)(TC_s)]^{1/2} \qquad \text{-----------------------------}$$

- (7)

Malmquist Indices = (Technical Efficiency change)(Technological change)

$$\text{MI} \qquad = \frac{q_t/q_c}{q_s/q_a} \text{ X } [(TC_t)(TC_s)]^{1/2} \qquad \text{-----------------------------}$$

(8)

In general, productivity gains can be the results of improvements in efficiency and/or the improvements in the technological progress. MI>1 indicates progress in the total factor productivity of the DMU from period 1 to 2, while MI=1 and MI<1 indicate respectively no changes and decay in TFG.
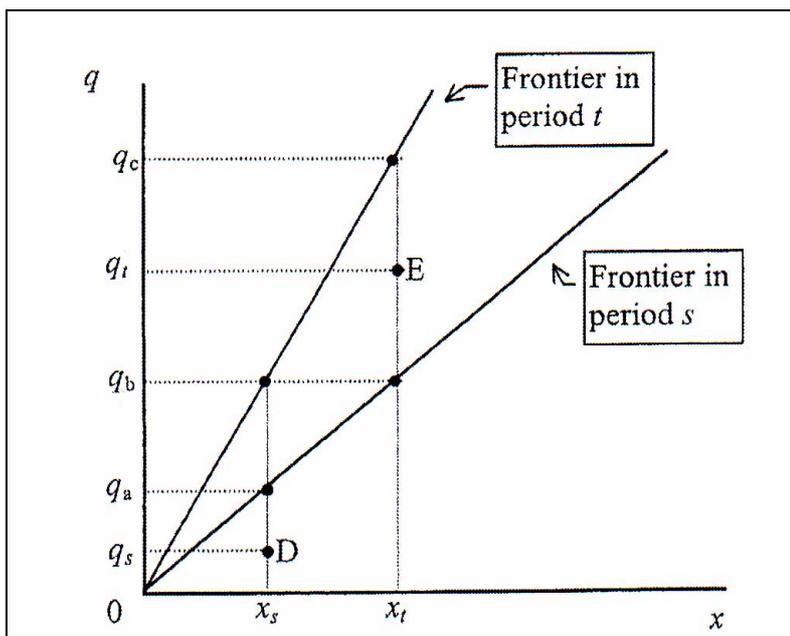
Source: Coelli *et al.* (2005)

Figure 1: Malmquist Productivity Indices

DATA

The variables used in this study are exhibited in Table 1. The input and output variables are collected based on a sample of decision-making units (DMUs) of 10 faculties and 5

branches of UiTM for the period 2000 to 2005. The output variable used is the number of graduates. Meanwhile the input variables used consist of the number of enrolled students, the number of academic staff, the number of non-academic staff, the total teaching hours and the operational years of each DMU. These inputs and outputs are measures understood and regularly used by the university administrators. There are other variables that are relevant to university production process are not included are due to the fact that the data on these inputs and outputs are not available.

Table 1: Description of input and output variables

Variable	Description
1. No. of students' enrolment	Total number of students registering in all types of courses in UiTM
2. No. of academic staff	Total number of academic staff teaching in UiTM
3. No. of non-academic staff	Total number of academic staff teaching in UiTM
4. Total teaching hours	Total teaching hours allocated for academic staff per DMU in UiTM
5. Operational year	Number of years each DMU in UiTM in operation
6. No. of graduates	Total number of graduates from each DMU in UiTM

RESULTS

Table 2 summarizes the descriptive statistics of the output and input variables used in this analysis. The table shows that on the average, the graduate production is 645 graduates with a standard deviation of 509.5. The number of graduates also varies from as low as 58 to as high as 1915. On the average, the graduate production is achieved with 3003 enrolled students, 153 academic staff, 164 non academic staff, 1568 teaching hours and 25 operational years. As observed in the table, there is a large variation in some input variables such as number of students' enrollment (ranging from 585 students to 7697 students) and number of teaching hours (ranging from 307 hours to 4220 hours).

Table 2: Descriptive summaries of inputs and outputs, 2000-2005

Variables	Mean	Median	Min	Max	Std. Dev
1. No. of graduates	645	562	58	1915	509.4
2. No. of students' enrolment	3003	2142	585	7697	2006.4
3. No. of academic staff	153	120	25	427	102.0
4. No. of non academic staff	164	150	120	194	13.7
5. No. of teaching hours	1568	2240	4220	307	1000.6
6. Operating years	25	23	3	47	15.0

Table 3 displays the values of MI and its decomposition, TEC and TC, derived from the software program DEAP (Coelli, 1996). The results show that the average annual productivity growth rate fluctuates in a non linear pattern. Between 2000 and 2001, TFP has increased by 42.9%. However, between 2001 and 2002, TFP declines by 54.7%. Then, productivity increased, on an average of 32.6% between 2002 and 2003, followed by an increase of 70.8% between 2003 and 2004. Finally, TFP declines on an average of 3.8% between 2004 and 2005. Overall, the graduate productivity growth of UiTM, on the average, has increased by 19.9% between 2000 and 2005. The decline in productivity between 2001 and 2002 may be due to the implementation of a new intake policy whereby the number of new students is reduced to maintain the quality of the learning environment in the university. However, productivity growth is at its peak between 2003 and 2004. This situation may be due to a response to the government's request of having students' enrollment of 200,000 in UiTM by the year 2010.

As the annual TFP is a geometric mean of two components, i.e., technical efficiency change and technological change, any changes in the productivity growth could be attributable to either the aforementioned components. Two TFP values stand out as compared with the rest. Firstly, the lowest TFP is observed between 2001 and 2002, which is a decrease of 54.3%. This value is the net outcome of a simultaneous decline of 44% in technology (an inward shift in the efficiency frontier) and a deterioration of 17.6% in technical efficiency (faculties moving away from frontiers. Secondly, the highest TFP is observed between 2003 and 2004, which is an increase of 70.8%. This TFP growth is largely driven by adoption of new technologies (91%) rather than gains in efficiency improvement (-10.6%). Overall, on the average, the TFP growth of 19.9% is found to be driven largely by adoption of new technologies (32.5%) rather than gains in efficiency improvement (-10.3%).

Table 3: Annual Means of Malmquist Index, 2000 – 2005

Interval	TEC	TC	TFP
2000-2001	0.939	1.521	1.429
2001-2002	0.824	0.555	0.457
2002-2003	0.878	1.551	1.362
2003-2004	0.894	1.910	1.708
2004-2005	0.952	1.090	1.038
Mean	0.897	1.325	1.199

Table 4 indicates that eleven faculties and five branches have an increase of TFP values between 4.2% to 115% with Faculty 4 has the highest TFP increase of 72%. This productivity increase is attributed by 93.3% in technological change at the expense of a

decrease in technical efficiency of 11%. Only four faculties register a decrease in their productivity level, ranging from 6.2% to 83.5%. Faculty 2 has the lowest average decrease in annual productivity of 83.5%. The decrease in TFP for Faculty 2 is due to a poor performance in technical efficiency change (-88%) rather than technological change (37.8%). Those faculties and branches with deterioration in technology may need to acquire new technology and the necessary skill upgrades among their academic staff to improve their performance. In the cases of when faculties and branches experience deterioration in technical efficiency may, their performance could be improved by upgrading their managerial skills.

Table 4: Malmquist Indices by DMU

DMU	TEC	TC	TFP
Faculty 1	0.891	1.170	1.042
Faculty 2	0.120	1.378	0.165
Faculty 3	0.578	1.623	0.938
Faculty 4	0.890	1.933	1.720
Faculty 5	0.890	1.476	1.314
Faculty 6	1.118	0.985	1.101
Faculty 7	1.134	0.661	0.750
Faculty 8	0.911	0.877	0.799
Faculty 9	1.039	0.880	0.914
Faculty 10	1.105	1.039	1.148
Branch 1	0.981	1.211	1.188
Branch 2	0.893	1.657	1.480
Branch 3	0.995	1.611	1.603
Branch 4	1.011	1.248	1.262
Branch 5	0.831	1.343	1.116

SUMMARY AND CONCLUSIONS

Efficiency and productivity growth were analyzed over the period 2000 to 2005 within the framework of the DEA based MI. This allows for the simultaneous analysis of changes in best practices due to frontier growth and changes in the relative efficiency of faculties and branches in UiTM owing to movements towards existing frontiers. Overall, the results indicate that, on the average, annual productivity growth rate fluctuates in a non linear pattern with an average of 19.9%. The TFP growth was found to be driven largely by adoption of new technologies (1.325) rather than gains in efficiency

improvement (0.8974). This appears to be consistent with the findings of Worthington and Lee (2005) and Johnes (2006) where technological change is found to be the main contributor in the productivity growth of the universities in their studies.

It is important to note that this is not a definitive study of university performance in terms of efficiency and productivity measures. Many factors could influence the chosen performance measures including data quality and non-discretionary variables in terms of faculties' characteristics and differences in the operating environment (Carrington, 2005). However, the results from this study do provide preliminary indicators on the performance of UiTM's faculties and branch campuses in terms of efficiency and productivity measures.

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EFFECTS OF A NEW NATIONAL NETWORK ON VALUES & PRACTICES IN HIGHER EDUCATION

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ABSTRACT

The introduction of a new national quality network of higher education providers and government agencies to the Omani post-secondary education sector is transforming the way that quality assurance and quality enhancement initiatives are being addressed. This paper outlines the state of the sector prior to the establishment of the Oman Quality Network (OQN), as determined through a national needs analyses that was the precursor to the development of a new national quality management system. It sets out the public policy arguments for and against having such a network. These include the benefits of information sharing and attaining coordinated input into government initiatives, verses the competitive pressures of a sector which is about half privately owned. Then, the paper chronicles the establishment of the OQN and describes the network's purpose, structure and planned activities. While the OQN is new, already it has made a demonstrable impact on the sector as evidenced through the popularity of new types of information sharing activities within the sector (such as a National Training Program), but also through unanticipated difficulties in bedding down the network concept. This is analyzed and explained in terms of the cultural adjustments required to embrace a new type of sociopolitical structure.

INTRODUCTION

The Sultanate of Oman is a country of approximately 2.5 million people situated at the northeastern corner of the Arabian Peninsula. Its postsecondary education system, which has grown significantly since its commencement in 1970, comprises fifty higher education providers (HEPs)[2] of diploma and degree programs and has an annual intake of about 60,000 students. In Oman, the term 'higher education' is usually (but not always) used to mean postsecondary education. In this paper, the acronym 'HEPs' is used to refer to any provider of diploma or degree programs.

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[2] Oman HEPs include one public university, four private universities, 18 private colleges and a number of public colleges of technology (offering vocational education programs), colleges of applied science, health institutes and various other institutes.

A project has been conducted over the past eighteen months, under the joint auspices of the Ministry of Higher Education (MoHE) and the Oman Accreditation Council (OAC), to review the sector and strengthen its quality management system. The resulting draft *Plan for an Omani Higher Education Quality Management System*, known as the "Quality Plan" (MoHE & OAC, 2006) sets out 12 major goals, covering policy infrastructure issues (such as developing a standard classification for education framework and revising the qualifications framework); standards (revising institutional standards and developing, through appropriate international benchmarking, discipline-specific student learning outcomes); quality assurance issues (such as designing and implementing an institutional quality audit program and revising the institutional and program licensing and accreditation arrangements); and quality enhancement arrangements (such as improving sector's capability through appropriate training and networking).

Within the quality enhancement aspect of the Quality Plan is the following objective: "to establish an Oman Quality Network to facilitate the communication and the exchange of ideas and effective practices" (ibid, p50).

This paper outlines the reasons for, and intended benefits of, such an objective. A report is given of the progress to date in implementing the objective, and the paper concludes with an analysis of the success thus far, along with some of the challenges that have been faced. It is hoped that this paper will tell a useful story for those states looking to establish their own higher education quality enhancement networks.

The Competitive Nature of the Higher Education Providers in Oman

As part of the sectoral review and development of the Quality Plan, the authors visited a majority of the private HEPs and a representative sample of the private HEPs. The primary purpose of the visits was to solicit the sector's views on quality assurance and quality enhancement issues of national interest. A dominant theme in the findings was a dearth of cooperation and collaboration within the sector. This confirmed earlier statements by the MoHE, which noted that "the level of cooperation [between private HEPs] is very limited" (Directorate General of Private Universities and Colleges, 2004, p11).

It is important to note that the postsecondary education sector in Oman is a mix of public and private providers. The private providers rely on private tuition fees and government scholarships, whereas the public institutions are fully funded by the Government. Within the private sector there is intense competition for staff, students and scholarships. This commercial incentive is one obvious reason why the HEPs have adopted a competitive stance towards each other. But there are other reasons also.

Within the public sector there are homogeneous groups of providers, each under the management of particular government entities. For example, the colleges of technology are under the management of the Ministry of Manpower; and the health and nursing institutes are under the management of the Ministry of Health. The colleges of education are under the MoHE (the colleges of education are currently transforming into degree-granting colleges of applied science, which will bring them more directly into

competition with private colleges of higher education). The management of each group rests with a Director General, and as a result, there is a high level of interaction – even commonality – within each group. However, the strictly defined structural distinctions between these groups, and the political dimension of those distinctions, means that inter-group collaboration was limited.

The Manpower and Health HEPs are more oriented towards vocational and professional education than purely higher education. However, that pedagogic distinction is not as clearly demarcated (in definition or via the regulatory systems) in Oman as in some other countries and has played lesser role in keeping the HEPs form collaborating than might have been expected.

It is also worth noting that the Oman's postsecondary education sector is nested within a strong cultural and political tradition in which respect for authority is paramount. This tradition is reinforced by organizational structures that favour formal hierarchies and compliance. Such a context has had a profound impact on the way in which the sector has been designed and enacted.

In this paper, "cooperation" is defined as having two separate but related dimensions. The first is toleration; meaning the mutual acceptance of each other's right to exist and operate. The second is collaboration; meaning working together towards joint aims. The Omani postsecondary sectoral profile creates structural, political and commercial barriers to cooperation – primarily in terms of collaboration.

During the aforementioned visits with HEPs, Vice-Chancellor', Deans and other people in HEP leadership positions expressed their dissatisfaction with the low level of cooperation in the sector. Interestingly, many commented that while they were willing to engage in collaborative activities, they doubted that others would because of the fierceness of the competition. This was, in aggregate, paradoxical. On the one hand, the interviewees were perhaps not being fully honest about their own intentions (perhaps motivated by a desire to not appear disrespectful towards the authors who, as government officials, were exploring the feasibility of a network) but were accurately portraying the balance of the sector. On the other hand, it is possible that they were genuinely seeking to be cooperative but were underestimating the willingness of the rest of the sector.

What was clear was that the lack of cooperation meant that a number of strategies that could improve the sector had been unavailable. For example, standards could be collaboratively developed; rising journal subscription fees could be alleviated through consortium-based purchasing; good practices on any number of matters could be shared or traded. These possibilities were not being pursued in any systematic fashion.

A decision was made by the network instigators[3] to err in favour of optimism. Specifically, it was proposed that some of the lost opportunities could be pursued through a semi-formal mechanism called the Oman Quality Network (OQN), which would be a

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[3] The principle instigators of the OQN were this paper's authors and Dr Josephine Palermo, then Quality Enhancement Consultant to the MoHE, under the direction of H.E. the Minister of Higher Education.

cooperative mechanism whereby sector representatives could gather regularly to explore methods of pursuing matters of common interest.

This proposal was a radical departure from the more traditional sectoral mechanisms. With only a dubious initial commitment from HEP leaders, it was helpful that the proposal could be reinforced, if necessary, with more formal means. Specifically, the Government has in its Strategic Plan for Education an Action that HEPs "are encouraged to share resources and strategies in the development of quality and also to develop effective systems of articulation" (MoHE, 2006, p93). This Action provided an official mandate to pursue the agenda, even though it did not specify a network *per se*. Her Excellency the Minister of Higher Education also took a personal interest in establishing the network, and this will be discussed later.

This political mandate is supported internationally. The UNESCO/OECD *Guidelines for Quality Provision in Cross-Border Higher Education* recommend: "that higher education institutions/providers delivering cross-border higher education … share good practices by participating in sector organisations and inter-institutional networks at national and international levels" (UNESCO/OECD, 2005, pp14-15).

Benchmarks for Networks

Informal networks are a new concept for Oman (and the Gulf region more generally). However, there are international precedents for structures that focus on sharing good practices, ideas, and even problems that are of mutual interest. The instigators undertook some benchmarking to adapt and adopt ideas which may assist with Oman's project.

The International Network for Quality Assurance Agencies in Higher Education (INQAAHE) is the global network of external quality assurance agencies (EQAs) such as the OAC. It released *Guidelines of Good Practice* (INQAAHE, 2005), which encourage EQAs to cooperate. "As far as possible, the EQA Agency collaborates with other EQA Agencies, eg. about the exchange of good practice, review decisions, providers of transnational education, joint projects, staff exchanges" (ibid, p5). This has been enacted, in part, through the establishment of regional networks such as the Asia Pacific Quality Network, and a Middle Eastern network is pending. While the membership of these networks is EQAs (which generally are not in direct competition) rather than on HEPs, the principle of sharing is very clearly signaled.

There numerous international examples of sector networking-type activities conducted by HEPs. The New Zealand Quality Enhancement Meeting (QEM) is an annual gathering of quality assurance leaders from all New Zealand universities. It was prompted by the establishment of the New Zealand Universities Academic Audit Unit and its instigation of institutional quality audits, and has been operating successfully for twelve years. A key element in their success is the combination of formal paper sessions with informal group discussions on issues of common interest.

The Australian Universities Quality Agency (AUQA) established a Joint Steering Group (JSG), which oversees an Australian Universities Quality Forum (AUQF) that has run annually since 2002. The JSG comprises representatives from AUQA, HEPs, professional bodies in the sector and other stakeholder groups (see

www.auqa.edu.au/auqf/). It is an example of using a structural approach to achieving a voluntary collaborative venture. As with QEM, the AUQF was established in response to the instigation of institutional quality audits by AUQA.

Another example, and one which directly confronts the perception that good practices are commercially sensitive and therefore should be protected in confidence, is the AUQA Good Practice Database (see www.auqa.edu.au/gp/), which is designed to "make information about good practices in the … sector publicly available. It is intended that such information will serve as a general guide to the sector to assist it in its efforts to improve." HEP practices that are found, through external audits conducted by EQAs, to be commendable and potentially transferable are written up as case studies, refereed and published on the website. The continued success of this website is proof positive that sharing can work (there are currently 172 separate entries from two countries – Australia and New Zealand). The value-added proposition for contributing HEPs is simple: for every good practice that they contribute, they will have access to many more from all the other contributors (in other words, a very good return on investment).

Establishing the Oman Quality Network

The vision for the OQN was an association of all HEPs, some of which are public and some of which are private, along with select other stakeholders – most notably the MoHE and OAC. The OQN would receive membership fees; have a constitution; elect an executive committee and officers to facilitate the network's affairs; and conduct quality enhancement activities determined by, and in the mutual interests of, the members (including provision of feedback to the Government on policy initiatives).

The establishment of a semi-formal entity in a country unaccustomed to such structures is complex. As with most countries, there are specific conditions and rules in Oman for the establishment of certain types of entities (government directorates, companies, charitable entities etc.). While the spectrum of entities is broad, there is little accommodation for entities that do not fit within these set formats and the OQN falls within this area.

Public HEPs have very limited ability to act with autonomy, and even private HEPs are supervised by a general directorate in the MoHE and thereby have limitations on their autonomy above and beyond those experienced in many other countries. Therefore, the formation of a semi-formal network of HEPS that would have a public profile, hold a bank account, receive and spend money from members, almost paradoxically required very formal arrangements.   While a well-attended national meeting of HEP representatives was held to explore the network idea (31 May 2006), public HEP leadership would not act without political direction, and the Government would have been reluctant to engage with a network for which it had little knowledge or confidence.

Another problem encountered in the early stages was reluctance by the sector to accept email as a suitable official method of communication. The network instigators deliberately employed email rather than formal letters in order to emphasise the informality and efficiency envisaged for the network, and to avoid the use of Government letterheads, which would signal that the network would be an instrument of Government. This strategy was not completely successful (for reasons including poor Internet connectivity; people not yet accustomed to using email as a regular method of

communication; and lack of acceptance of email as official communication), and postal mail was eventually deployed for some people and certain topics.

Her Excellency, Dr. Rawaya Al Busaidi, the Minister of Higher Education, exercised political leadership by taking on the role of Patron of the OQN. This helped to garner commitment to the network by leaders of public HEPs, and provided a strong signal to the entire sector of the importance given to the OQN. It also facilitated the formal approvals required for opening a bank account – a matter that was rendered awkward because of the aforementioned difficulties in defining the legal status of the network as an entity.

During these initial stages, H.E. the Minister took a direct role in approving the network's guidelines (the notion of a 'constitution' was deemed too formal for the proposed vision and would have required complex bureaucratic approvals) to ensure that they were within the tolerance limits of Oman's sociopolitical system. In other words, while OQN was accepted as an innovation that would challenge some mores, there remained other mores that needed to be respected and senior guidance was beneficial in that respect.

H.E. the Minister also took a direct role in the appointment of the inaugural executive committee. Such a construct is a radical innovation for Oman because the country does not typically employ elections for determining leadership positions (although there are some recent examples within the national political system). Again, the involvement of a Minister helped to smooth the introduction of this concept.

The OQN was formally launched by H.E. the Minister at a national meeting on 20 September 2006. The launch then transformed into a second national meeting for the confirmation of the guidelines, executive committee, membership fees and planned activities. In subsequent media, H.E. the Minister confirmed a key role of the OQN: "Through the network, the higher education institutions in the Sultanate will be able to cooperate and exchange views and consultations regarding the policies and legislation governing the higher education system in the country"(Oman Tribune, 22 September 2006).

It is important to note that while the OQN provides a new and potentially very valuable means for coordinating sectoral feedback on policy issues, it does not replace the formal channels of communication. Vice-Chancellors, for example, are not obliged to work through the network in response to a Governmental directive.

Post the establishment of the OQN H.E. the Minister, as Patron, is kept apprised of the OQN's activities and will occasionally engage with the OQN on matters of policy, but refrains from direct interventions. This non-directive role is uncommon for Oman. It provides an exemplar to the sector of the extent to which stakeholders need to reconceptualise their roles in order to maximize the chances for innovative solutions to national problems to be successful.

The OQN Structure and Guidelines

The OQN is now a network of about 45 HEP members (from a possible total of just over 50). Some HEPs are not yet members because they have not yet nominated their

Representatives or have paid their fees. Some HEPs that exist within a group, such as Nursing Institutes or Colleges of Technology, believe that it is sufficient for one of the HEPs within their group to be a Member.

The only requirement for membership at this stage is to be a licensed HEP in Oman and to pay the membership fee. Each Member nominates up to two people to be its Representatives in the network. The Representatives are typically the senior academic and quality officers (e.g. Deans and Quality Assurance Managers). Members were asked to choose Representatives who are respected amongst their peers for their commitment to improving quality in their field or area of responsibility. They should also engender trust amongst their peers, having demonstrated competency and integrity.

The Representatives elect an Executive Committee of seven people from within their numbers. This committee then appoints three officer positions: the Chairperson, Secretary (who is also the Standing Deputy Chair) and Treasurer. In the first year, the precise roles for these positions was not specified.

Formal *Guidelines* (OQN, 2007) set out the membership and modus operandi. It also outlines key principles, which include the following:

- All members have in common a desire to advance the quality of Omani higher education
- The OQN is a network of the whole higher education sector, including private and public institutions. It is not an instrument of the government nor a mechanism for conducting campaigns outside of the quality agenda by the HEPs.
- The OQN is a network of equal peers. All leadership roles in the network will be shared.
- The OQN will share, in good faith, information about successes, failures and lessons learned in quality assurance.
- Nothing shared in the OQN will be used in a manner detrimental to any Member.
- Although HEPs may compete on a number of levels, the OQN recognizes that we can achieve things together than we could not achieve individually.1
- The OQN will periodically review its activities and progress in relation to raising the capacity of the sector in quality enhancement and quality assurance.

The OAC provides administrative support to the OQN, including consultant advice, the services of an Administrative Assistant, and a website[4]. Through these services, a very simple but potent device was established – an electronic mailing list of Representatives. This list is used to communicate policy issues, promote forthcoming events, etc. Although email, as previously mentioned, is not always accepted as an appropriate medium for formal communication, it is well accepted as an efficient means for informal communication

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[4] At the time of writing, the OQN website is in the process of changing from http://www.oac.gov.om/qe/oqn to http://www.omanqualitynetwork.org

OQN Activities

The OQN is an instrument of the sector and for the sector. Therefore, the Members get to determine the activities of the OQN. Some of these are stipulated in the *Guidelines*, which, for example, require the OQN to conduct an annual national quality conference. Representatives determine other activities as the need arises. The OQN's inaugural year was preoccupied with establishment tasks. However, a number of quality enhancement projects took place. Some of these are as follows.

The draft *Quality Plan* includes many projects, such as the development of discipline-specific student learning outcome standards, which will rely on the active involvement of the sector. One of the first major projects undertaken was the development of standards for General Foundation Programs – the single largest program in the postsecondary sector. The OQN provided direct access to people from throughout the sector, which assisted with compiling working groups and disseminating drafts for comment. Indeed, the daft Quality Plan itself was discussed at an OQN meeting and improvements made as a result.

The development of higher education guidelines and policies is a constant phenomenon nationally and, increasingly, internationally. OQN Representatives were circulated a copy of the UNESCO/OECD *Guidelines for Quality Provision in Cross-border Higher Education* and invited to submit their comments to a nominated Executive Committee member, who then compiled them into a consolidated response from the sector that was submitted to UNESCO as part of their process for reviewing the Guidelines.

The National Quality Training Program

Perhaps the most significant activity in which the OQN has engaged thus far is the National Quality Training Program (NQTP). This program was developed to raise the capacity & capability of the higher education sector. In summary, the NQTP is a series of workshops provided to OQN Representatives and other targeted participants depending on each topic. For the first year, the topics were determined based on a gap analysis that compared the sector's capabilities with those that could be required under the proposed revisions to the national quality management system (as set out in the draft *Quality Plan*). The topics presented to date include the following:

- ADRI (a quality assurance model for self reviews & external reviews)
- Key Performance Indicators
- Good Documentation-policies, procedures & guidelines
- Preparing a Self-Study Portfolio
- Process Mapping
- Benchmarking
- Strategic Planning
- Risk Management
- Quality Audit
- Consulting Stakeholders

- Using Statistics in Reporting
- Getting the Most from Student Evaluations
- Differences of Approaches to Learning & Teaching

The NQTP takes a train-the-trainer approach, whereby the Representatives are provided with the full workshop resources so that, having completed the workshop themselves, they may be able to replicate it within their own HEPs. One of the key difficulties with train-the-trainer approach is that participants often feel that they lack the depth of knowledge to act as facilitator. Therefore, considerable attention is paid to the development of workshop materials, which provide the essential theoretical and practical points; stimulate useful workshop activities; and point the way to further study for those who are interested. A *Training Program* website (OAC, 2007) provides all module details, resources, discussion boards and photographic records.

Each workshop comprises a 50 minute seminar, followed by a 20 minute coffee break (an essential and often underrated part of the networking experience), then a one hour session where participants interact in small groups on exercises linked to the issues raised in the seminar. The workshop concludes with a plenary feedback session of 30 minutes, during which the group activities are discussed and key messages consolidated. For many of the participants, these workshops were the first time that people from competitor HEPs had gathered together to openly share ideas, concerns and practices on matters of common interest.

A fuller evaluation of the effectiveness and success of the NQTP is provided elsewhere (Carroll & Palermo, 2006). Suffice here to note that a dominant theme in the participant feedback survey results is appreciation for the networking opportunities provided through the NQTP. This provides confirmation that the decision to err on the side of optimism in establishing the OQN was appropriate.

Almost all of the workshops provided to date have been organized and facilitated by external consultants, specifically because they were designed to address gaps in the Oman sector, and also to ensure that the first attempts at sectoral cooperation were facilitated form a position of competitive neutrality. This has proven effective.

The next stage in the NQTP is to transfer fuller responsibility not only for its administration, but also for its substance, to the OQN. With the principle of collective sharing now being well established and the main gaps being addressed, the proposition now is that it is timely for good practices to be drawn directly from the sector and shared through the NQTP workshops.

The OQN after its First Year - Cultural Challenges to the Modus Operandi

At its first annual general meeting, on 30 May 2007, the OQN made major revisions to its Guidelines to reflect lessons learned from the first year of operation. The changes focused on distinguishing between Members, Representatives and the Executive Committee; tidying up administrative details (regarding financial affairs etc.); and clarifying the precise roles of the Executive Committee and its officials.

This last amendment was particularly important. As has been mentioned, Oman has developed through an aristocratic system of social organization. A primary characteristic of this system is that decisions are made by those in senior positions and enacted by those in junior positions. Seniority is usually inherited or conferred by appointment. Social cohesiveness is attained through a tradition of respect for and compliance with the hierarchy. In this context, the concept of a network of peer (i.e. equal) members, coordinated by a committee elected by and from the members, is novel not only in its organizational structure but also as a social construct. The efficacy of such a network requires that the members be familiar with collaborative and cooperative methods of information sharing, decision-making and decision enacting. That eventuated not to be the case. The OQN was established after several public fora during which discussions about its modus operandi were held. However, it transpired that this did not constitute adequate preparation for the members to effectively operate the network in accordance with its design and potential. Methods of hierarchical leadership were exercised during the first year that produced predictably disappointing results. For example, there were attempts to wield executive committee membership as if it conferred traditional decision-making authority; the network experienced a lack of self-directed activity (the members being unaccustomed to such a method); and various parties external to the network were not inclined to acknowledge its legitimacy because of its unorthodox structure and mission. As a consequence, the level of enthusiasm amongst members waned and disenchantment with what had been a promising initiative set it among several of the executive committee members.

This had the corollary of slowing progress on quality enhancement activities. This, in turn, made collection of membership fees more difficult because some Members were not yet convinced of the benefits. It was clear that a re-energising strategy was required to ensure that the initial momentum is recaptured. This strategy included revisions to the Executive Committee regulations that provided for shorter terms, meaning that enthusiasm may be maintained through a higher turnover, which provides more opportunity for Representatives to participate at that level.

CONCLUDING REMARKS

There is a strong international trend favouring the establishment of networks for HEPs and EQAs. The experience in Oman has shown that while there are clear potential benefits from such a strategy, networks are steeped in cultural values that are not universal – such as democratic decision-making, acceptance of semi-formal structures, and collaboration amongst competitors. So, developing a successful quality network in Oman will not be successful unless the effort expended on establishing social *structures* is balanced with effort on embedding social *processes*. Attention is often placed on the structure, because it is tangible topic including such social and political tools as committee memberships, guidelines, memoranda of understanding, bank accounts etc. However, it is perhaps even more vital that emphasis is given to inculcating that values and practices that are necessary in order for the new structure to effectively facilitate attainment of the overall mission.

The OQN is entering into its second year, having learned that the process of social change is difficult and can include unanticipated and complex issues – even when, on the surface, it appears simple. The prognosis for the OQN is now very positive.

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ONLINE QUALITY ANALYSIS OF THE REQUIREMENTS SPECIFICATIONS PHASE OF THE SOFTWARE DEVELOPMENT CYCLE

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ABSTRACT

Software quality assurance (SQA) is defined as a systematic approach to the evaluation of the software quality and adherence to software product standards, processes, and procedures. In short, SQA is the process of ensuring that the quality of a product or process is sufficient to meet the needs of the stakeholders. In this paper, the researchers intend to concentrate only on the requirements specifications phase of the software development cycle. It is a known fact that companies will pay less to fix problems that are found early in any software development cycle. A requirement is an objective that must be met, while a specification describes how the objective is going to be accomplished. Specific standards and procedures are established to provide the framework from which the software evolves. Standards are the set of criteria to which the software products are compared. Procedures are the established criteria to which the development and control processes are compared. The SQA audit technique is used in this research to determine whether or not the required standards and procedures within the requirements specifications phase are being followed. The proposed online quality analysis system will assure that software requirements are complete, consistent, correct, modifiable, ranked, traceable, unambiguous, and understandable. The system interacts with the developer through a series of questions and answers session, and requests the developer to go through a checklist that corresponds to the list of desirable characteristics for requirements specifications. The audit results will be displayed at the end of the session.

INTRODUCTION

What is software quality? Philip Crosby (Crosby, 1979), in his book on software quality, provides a wry answer to this question.

> *The problem of quality management is not what people don't know about it. The problem is what they think they do know.*

Those who do not quite understand what software quality have the tendency to think that software quality is something that you begin to worry about only after the source codes have been generated. This perception is very misleading, and as a result low quality software are being produced. In general, software quality assurance (SQA) is defined as a planned and systematic approach to the evaluation of the software quality and adherence to software product standards, processes, and procedures (NASA-STD, 1991). SQA includes the process of assuring that standards and procedures are established and are closely followed throughout the systems/software development life cycle (SDLC).

SDLC is a structured software development approach that divides an information systems development project into distinct stages that are being carried out sequentially and contain key decision points and sign offs. During the SDLC, compliance with agreed-upon standards and procedures is evaluated through process monitoring, product evaluation, and audits (NASA-STD, 1991). Standards make it possible to measure the size, content, value, or quality of a software product. Standards are the set of criteria to which the software products are compared, while procedures are the established criteria to which the development and control processes are compared (NASA-STD, 1991).

In this paper, the researchers intend to concentrate only on the requirements specifications phase of the software development cycle. It is a known fact that companies will pay less to fix problems that are found early in any software development cycle. Finding errors or problems early in the development process will significantly reduce testing, debugging and maintenance costs. The main purpose of this paper is to introduce an online software requirements specifications quality analysis system. The proposed online quality analysis system will assure that software requirements are complete, consistent, correct, modifiable, ranked, traceable, unambiguous, understandable, testable, validatable, and verifiable. The system interacts with the developer through a series of questions and answers session, and requests the developer to go through a checklist that corresponds to the list of desirable characteristics for requirements specifications. The SQA audit technique is applied in this research to determine whether or not the required standards and procedures within the requirements specifications phase are being followed by the system developer.

Research Objectives

- To develop an online software requirements specifications quality analysis system that can assist a software developer in determining whether or not the requirements specifications of a system under development meet the required standards and procedures.
- To improve online auditing (using SQA audit technique) of software development process.

REQUIREMENTS SPECIFICATIONS BACKGROUND

Software requirements specifications (SRS) are basically an organization's understanding of a customer's system requirements and dependencies at a given point in time. The SRS document states those functions and capabilities a software system must provide, as well as states any required constraints by which the system must abide. It also serves as a blueprint for completing a project with as little cost growth as possible (Debray, 1997). As mentioned above, a requirement is an objective that must be met, while a specification describes how the objective is going to be accomplished (Sisson, 2002). A critical part of the quality assurance role is proactive involvement during the system's requirements specifications phase. The return on investment (ROI) of this up-front quality assurance

involvement has been shown to pass off because several studies have determined that companies will have to pay less to fix problems that are found early in any SDLC (Sisson, 2002). Figure 1 gives an idea of the cost of change for changes made at different phases of the SDLC.
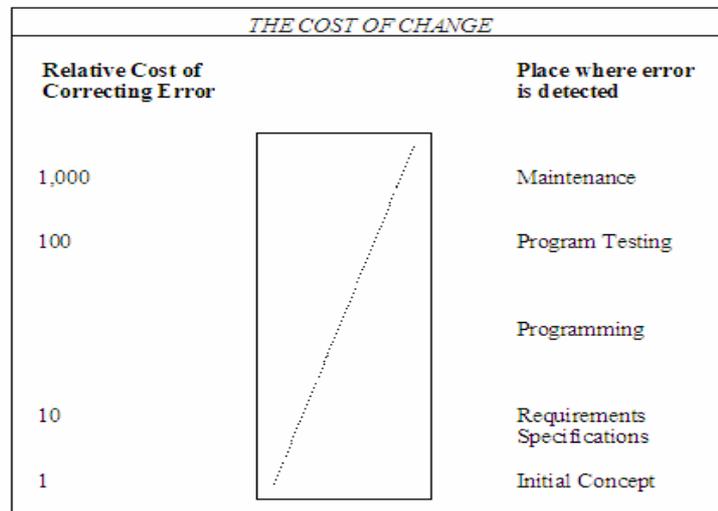
Figure 1: *The cost of change at various phases of the SDLC (Treasury Board of Canada Secretariat, 1991)*

In order to determine the quality of the software development process, a list of quality attributes that requirements specifications are expected to exhibit need to be compiled (Wilson et al., 1996). Several desirable characteristics for requirements specifications that have been identified in previous researches are as follows (Peters, Pedrycz, 2000; Wilson et al., 1996; Japenga, 2003):

- *Complete*
  Complete requirements specifications must clearly define all real life situations and includes all the necessary capability features.

- *Consistent*
  Consistent requirements specifications must not have any conflicting statements among them.

- *Correct*
  A correct requirement specification must accurately and precisely identify the individual conditions and limitations of all cases that the desired capability will encounter and it must also properly define the capability's response to those cases.

- *Modifiable*
  Related requirements specifications must be grouped together in order to be modifiable, while unrelated requirements specifications must be separated.

- *Ranked*

  Requirements specifications must be ranked according to stability or/and importance.

- *Traceable*

  Each requirement specification must be uniquely identified to achieve traceability. Uniqueness can be achieved by the use of a consistent and logical scheme for assigning identification to each specification statement within the requirements specifications document.

- *Unambiguous*

  Each requirement specification can only be interpreted in one way. The use of weak phrases or poor sentence structure must be avoided.

- *Understandable*

  A requirement specification is understandable if the meaning of each of its statements is easily grasped by the readers (Stokes, 1991).

- *Testable*

  A testable requirement specification is the one that is in a manner that pass/fail or quantitative assessment criteria can be derived from the specification itself.

- *Verifiable*

  In order to be verifiable, each requirement specification at one level of abstraction must be consistent with those at another level of abstraction.

- *Validatable*

  A valid requirement specification is the one that has been analyzed, understood, accepted, validated and approved by the project participants, managers, engineers and customer representatives.

The above characteristics are closely related to each other, and some cannot exist without the others. During the analysis and audit review of the requirements specifications, several primitive indicators that provide some evidence that the desired attributes are present or absent are being linked to the above quality attributes. Requirements specifications can be a written document, a graphical model, a formal mathematical model, a collection of usage scenarios, a prototype, or any combination of these. In order to simplify the process of ensuring that the requirements specifications fulfill the desired software quality standards, we will not scan through the documents, but will allow the software developer to indicate whether each requirement specification has fulfilled the desired characteristics based on the specified quality indicators. The online quality analysis for requirements specifications is only meant for checking whether or not the system developer has followed certain standards and procedures, and it is not a tool to actually audit the contents of the requirements specifications documentation. In other words, it is only useful as guidance to software quality assurance

SOFTWARE QUALITY ASSURANCE (SQA)

Apart from the above SQA definitions, SQA can also be defined as "conformance to explicitly stated functional and performance requirements, explicitly documented development standards, and implicit characteristics that are expected of all professionally developed software (Pressman, 2001)." This definition serves a better purpose in concentrating on only the requirements specifications phase of the SDLC, since it emphasizes on three important points (Pressman, 2001):

1. Software requirements are the foundation from which quality is measured. In general, lack of conformance to requirements is lack of quality.
2. Specified standards define a set of development criteria that guide the manner in which software is engineered. If the criteria are not closely followed, lack of quality will almost surely result.
3. A set of implicit requirements often goes unmentioned (for examples, the desire for ease of use and good maintainability). If software conforms to its explicit requirements, but fails to meet its implicit requirements, then software quality is suspect.

Software Quality Assurance (SQA) Activities

The Software Engineering Institute recommends a set of SQA activities that address among others quality assurance planning, oversight, record keeping, analysis, and reporting. Normally, these activities are facilitated by an independent SQA group. The activities performed are as follows (Pressman, 2001):

- Prepare an SQA plan for a project
- Participates in the development of the project's software process description
- Review software engineering activities to verify compliance with the defined software process
- Audit designated software work products to verify compliance with those defined as part of the software process
- Ensure that deviations in software work and work products are documented and handled according to a documented procedure
- Record any noncompliance and reports to senior management

As mentioned earlier, the SQA audit technique is used in this research in ensuring software quality. Audits are independent reviews that assess compliance with specifications, standards and procedures.

Requirements Specifications Quality Indicators

The most popular technique of knowing whether or not a requirement specification meets the minimum standards for quality assurance is to measure its size. The size of a requirement specification can be measured by counting the number of words it contains

or by counting the level of detail to which requirements are specified (Wilson et al., 1996). In general, nine categories of quality indicators for requirements specifications documents were established based on a representative set of NASA requirements documents selected from the SATC's (Software Assurance Technology Center, Goddard Space Flight Center) (Wilson et al., 1996). Basically, individual indicators were identified by finding frequently used words, phrases, and structures of the selected documents that were related to quality attributes and could be easily identified and counted by a computer program.

The nine categories are (Wilson et al., 1996):

- Imperatives
- Continuances
- Directives
- Options
- Weak Phrases
- Size
- Text Structure
- Specification Depth
- Readability

The proposed online quality analysis will make use of the above quality indicators in determining the overall quality of the requirements specifications of the specified system. This will be elaborated in more detailed in section 5.

Requirements Specifications Standards

Currently, there are many requirements specifications standards, but the most widely used standards are the IEEE Std 830-1998 (IEEE Std 830-1998, 1998). Given below are the standards (IEEE Std 830-1998, 1998):

IEEE Std 830-1998

Software Requirements Specifications

1. Introduction

1.1 Purpose
1.2 Scope
1.3 Definitions, acronyms, and abbreviations
1.4 References
1.5 Overview
2. Overall description

Our proposed system will check the level of conformance to the IEEE Std 830-1998 requirements specifications standards.

QUESTIONNAIRE SURVEY RESULTS

In order to know what the current practices are with regard to software development process quality assurance, we interviewed two systems developers and conducted a questionnaire survey on a group of participants. The main objective of the interviews and the questionnaire survey is to find out how software developers apply the audit technique in ensuring software quality.

The questionnaire was conducted by requesting the help of a few companies as well as approaching potential participants within the area of Cyberjaya. Given below (Table 1) are the questionnaire survey results. Only selected questions' results are included.

Table 1: Questionnaire survey results

Question 1: "Are you directly involved in software development?"		
YES	**93%**	
NO	**7%**	
Question 2: "Have you ever used an online software auditing system?"		
YES	**6%**	
NO	**94%**	
Question 3: "Have you ever performed auditing on a software development process?"		
YES	**47%**	
NO	**53%**	
Question 4: "Do you think that quality and auditing go hand-in-hand?"		
YES	**90%**	
NO	**10%**	

Question 5: "What is the most common software development model used in your company?"

Waterfall	15%
Rapid Prototyping	7%
Rapid Application Development (RAD)	11%
Component-Based	7%
Rational Unified Process (RUP)	37%
Others	11%
Do not know	12%

Question 6: "How important do you think auditing is to software development?"

Very important	65%
Important	32%
Not important	3%

Question 7: "Would you perform more auditing if it was automated?"

Most definitely	38%
Only if it is necessary	34%
Not sure	19%
Don't think so	3%
Not my job	6%

Question 8: "What do you think are the weaknesses of currently available online auditing system?"

Static	13%
Limited functions	40%
Do not give suggestions or corrective actions	30%
Other limitations	17%

Question 9: "What features would you expect from an online auditing system?"	
Easy navigation	22%
Quick and efficient checks	28%
Search function	20%
Able to generate audit reports	14%
Audit history	14%
Others	2%

In general, most respondents agreed that an online system is very beneficial in assessing the quality of the software development process.

THE PROPOSED ONLINE QUALITY ANALYSIS SYSTEM

Based on the research and survey that we have conducted, we decided to introduce a simple online quality analysis system that will measure the quality of the requirements specifications phase's results of the SDLC. The proposed online quality analysis system will pose a series of questions to the system developer based on the relationship between the requirements specifications' quality attributes and the relevant quality indicators for each quality attribute. The following table (Table 2) summarizes the relationships between requirements specifications' quality attributes and categories of quality indicators (Wilson et al., 1996).

Table 2: Relationships between requirements specifications' quality attributes and categories of quality indicators

INDICATORS OF QUALITY ATTRIBUTES										
Categories of Quality Indicators	Quality Attributes									
	1. Complete	2. Consistent	3. Correct	4. Modifiable	5. Ranked	6. Testable	7. Traceable	8. Unambiguous	9. Understandable	10. Validatable	11. Verifiable
1. Imperatives	X			X			X	X	X	X	X
2. Continuances	X			X	X	X	X	X	X	X	X
3. Directives	X		X			X		X	X	X	X
4. Options	X					X		X	X	X	
5. Weak Phrases	X		X			X		X	X	X	X
6. Size	X					X		X	X	X	X
7. Text Structure	X	X		X	X		X		X		X
8. Spec. Depth	X	X		X			X		X		X
9. Readability				X		X	X	X	X	X	X

The online quality analysis system will request the developer to go through a checklist that corresponds to the list of desirable characteristics for requirements specifications. The user (e.g. project manager) of the system must honestly provide correct information regarding the quality indicators of each quality attribute. The online quality analysis system will keep track of the user's responses and will display the audit results at the end of the session. The summary will include the percentage of conformance to the SQA standards and procedures and also the list of nonconformance attributes along with the categories of quality indicators that have not yet been fulfilled. If the percentage of conformance is satisfactory, then the requirements are considered to have met the minimum requirement of the SQA standards.

The proposed system will use the typical software quality measurement method in which quality is measured with a weighted sum of criteria measurements (Bowen et al., 1985). The following steps are used in measuring a quality attribute/factor of a software entity, and we are adopting these steps, with minor modifications to the original method, into our online quality analysis system (Peters, Pedrycz, 2000).

Method to Measure Software Quality (for the proposed online quality analysis system)

Step 1. Select quality indicators categories to measure each software quality attribute.

Step 2. Select a weight w for each quality indicators category (usually $0 <= w <= 1$; depends on the number of quality indicators categories that correspond to a particular software quality attribute).

Step 3. Select a scale of values for quality indicators categories scores (1 – 5, where 5 is the highest).

Step 4. Select a minimum and maximum target value for each quality indicator category score (we set 3 as the minimum and 5 as the maximum).

Step 5. Select a minimum and maximum target value for the software quality attribute score (we set 3 as the minimum and 5 as the maximum).

Step 6. Give each quality indicators category score (entered by the user).

Step 7. Compute a weighted sum.

Step 8. Compare the weighted sum with the preset min-max software quality attribute scoring range.

Step 9. If the weighted sum is outside the min-max scoring range, compare each individual quality indicators category score with the preset min-max criterion score range to direct software improvement activities (will be displayed in the audit report).

The weighting formulas for each software quality attribute in the quality measurement framework have the form $w_1c_1 + w_2c_2 + ... + w_nc_n$, where $w_1,..,w_n$ are weights and $c_1,...,c_n$ are quality indicators categories measurements. A weighting formula measures the aggregative effect of weighted quality indicators categories.

The quality analysis audit report will display the overall audit results. It indicates which categories of quality indicators are unsatisfactory (do not meet the minimum standards), and which quality attributes are not meeting the standards, and hence need to be improved.

CONCLUSION AND FUTURE WORK

In conclusion, as researchers, we believe that there are a lot more that we can contribute in improving software quality. Online requirements specifications quality analysis system is critical in ensuring that all other phases within the SDLC can be carried out smoothly, since SQA is normally measured by the quality of the software requirements specifications of the system. Furthermore, it is agreed that, lack of conformance to requirements leads to lack of quality. Future work includes the addition of online tutorial, auditing security control measures, and the use of a central database that is able to keep track of auditing history of software development projects.

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VALUES EDUCATION MANAGEMENT IN ASSUMPTION UNIVERSITY OF THAILAND AND SOOCHOW UNIVERSITY OF CHINA: A COMPARATIVE STUDY

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ABSTRACT

The study was conducted to determine the 345 selected instructors' perceptions of actual and expected values education management, including its planning, implementation, evaluation processes, in Soochow University in China and in Assumption University in Thailand; and to determine if significant differences of the instructors' perceptions on actual and expected values education management existed between the two universities.

As the result, the research found that: (1) Actual values education management in both universities were "medium practice", (2) Expected values education management in both universities were "much practice", (3) Significant differences are existing in the perceptions of actual/ expected values education management in these two universities. Moreover, the research also analyzed the possible factors that may result in these differences and provided recommendations for both universities.

INTRODUCTION

Values education as a necessary component in human resource development is regarded world-wide as becoming more and more important today than ever before by educators and scholars. In the UNESO 1996 Report, Jacques Delors stated: " Education must contribute to the over-all development of each individual, mind and body, intelligence, sensitivity, aesthetic sense, personal responsibility and spiritual values, and the introduction of values education could very well be the solution to today's human resource development program."

Into the 21st century, more educators realized that education reform not only needs to focus on improvement of students' academic achievement, but also needs to strengthen values education and to improve its management. That awareness cuts across all spheres of society; the current call for teaching values in the schools is part of a "values boom" that requires various values education programs to serve many different nations and societies. Universally, the experts are recovering a fundamental understanding: just as character is the ultimate measure of an individual, so it is also the ultimate measure of a nation. Given the enormous moral problems of youth facing all the countries, their deep social roots, and the ever-increasing responsibilities that schools already shoulder, the prospect of taking on values education can seem overwhelming.

The importance and necessity of conducting values education is more evident in China and Thailand. After nearly three decades of rapid economic growth, China and Thailand have achieved extensive economic progress in many fields. However, during the course of achieving economic progress with heated competition, the younger generations in

these countries have abandoned many traditional values, becoming more ambitious and self-centered. (Naisbitt J., 2005). Thus, parents and educators in China and Thailand are appealing that values education in schools should be re-strengthened, especially in higher education.

To gain a better understanding of these value situation concerns, this study explored the perceptions of instructors on actual and expected Values Education Management at Assumption University of Thailand and Soochow University of China. The two institutions that the researcher has chosen have great reputations for cultivating excellent values within their graduates. The researcher also expected to learn more about how to improve values education management by identifying what elements and factors should be stressed in the processes of values education management.

Research Objectives
The following objectives were formulated for this study:
1. To determine the perceptions of selected instructors on actual and expected Values Education Management in Assumption University and in Soochow University.
2. To compare the perceptions of the actual Values Education Management in Assumption University and in Soochow University.
3. To compare the perceptions of the expected Values Education Management in Assumption University and in Soochow University.

Hypotheses
1. There are no significant differences between the two universities relative to the perceptions of actual Values Education Management.
2. There are no significant differences between the two universities relative to the perceptions of expected Values Education Management.

Theoretical Framework
The theoretical framework on values education management in this study, as management of programs, was based on the Managerial Approach of curriculum development and implementation described by its proponents: J. Galen Saylor, William M. Alexander and Arthur J. Lewi (1981). The managerial approach considers the school as a social system, reminiscent of organizational theory, whereby groups of people such as students, instructors, curriculum specialists, and administrators interact according to certain norms and behaviors.

According to Saylor's Managerial Model (1981), the programs affected by curriculum should be part of the process of planning, and then in the process of implementation and evaluation. Instructors and supervisors involved in curriculum management should be willing to discuss these questions with their respective board members and professional staff.

Conceptual Framework
The researcher identified and compared the perceptions of instructors on the actual and expected Values Education management in the two universities, namely Assumption University, Thailand and Soochow University, China, using the Managerial Model of

Curriculum Development and Implementation for Management of Programs and Services described by Saylor (1981).

The dependent variables included two parts: instructors' perceptions of actual and expected values education management components. The independent variables were three values education management components namely, planning, implementation, and evaluation. The independent and dependent variables cited above are summarized in the framework shown in **Figure 1**.

Dependent Variables   Independent Variables
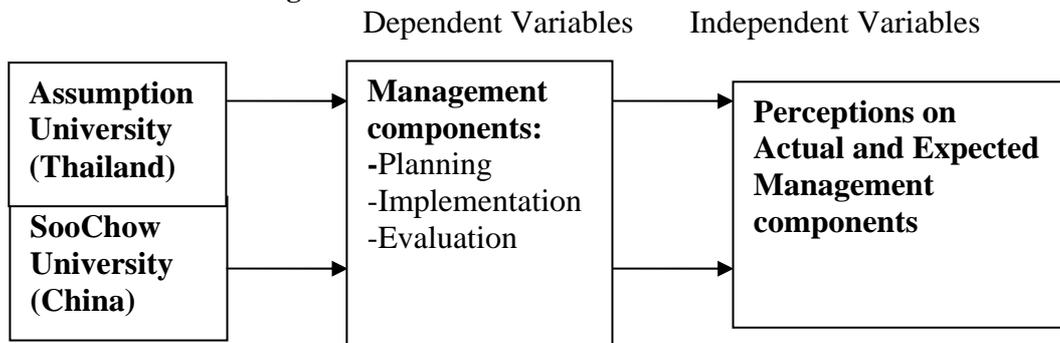
Figure 1 Conceptual Framework on the Identification and Comparison of Values education Management

Scope and Limitation of the Study
This study compared the perceptions of instructors on values education management mainly in three key processes: *planning, implementation, and evaluation* at Assumption University of Thailand and Soochow University of China during the academic year 2004-2005.The respondents' ratings on values education management were limited by their personal biases and other subjective factors. The study was conducted only in the Faculty of Arts, Faculty of Science and Technology, Faculty of Engineering, Faculty of Law in Assumption university, Thailand, and the same faculties in Soochow University, China.

REVIEW OF THE LITERATURE
Two universities in this comparative study
Assumption University, is a non-profit institution administered by the Brothers of St. Gabriel, a worldwide Catholic religious order, founded in France in 1705 by St. Louis Marie De Montfort, who was devoted to education and philanthropic activities. The university is an international community of scholars, enlivened by Christian inspiration, engaged in the pursuit of truth and knowledge, serving the human society especially through the creative use of interdisciplinary approaches and cyber technology. (ABAC Bulletin, 2001-2002)

Soochow University is a "State 211 Project" institute of higher education and Jiangsu provincial key comprehensive university, located in the ancient city of Suzhou that is famous for its classical gardens and known as "the Paradise on Earth".The University has developed into a first-rate provincial comprehensive institution in China with a complete coverage of all branches of learning, remarkably large enrollment, and outstanding educational outcomes.

Values Education and Its Management

There is an immense diversity of opinion regarding values education and its proper curriculum. But, as for theoretical perspectives which inform values education and the values teaching in schools, the ancient Greeks and Socrates in particular, seem to be an accepted starting point. Central to Socrates' philosophy were the two elements of morality and logic.

In the nineteenth century, Friedrich Nietzsche's writings became significant and have exerted an influence on the theory underpinning values education. In Nietzsche's philosophy of values education, activities might include discussions about power and authority; about dilemmas involving power struggles and tensions between opposing viewpoints or motivations.

In a Kantian perspective based on the thinking of Immanuel Kant (1724-1804), it is emphasized that actions should be based upon a sense of duty and responsibility and upon the facts that such actions could become a set of universal principles for action.
For John Dewey (1859-1952), the values dimension would be seen as part of all teaching and learning activities. It is also pertinent to note that, for Dewey, there could be no predetermined curriculum in a learning context as it is necessary for the learner to learn through experiences.

Although debates in recent research literature about values education have been going on, many advocates of values education argue that schools should play a more extensive role in the teaching of societal values and favor instilling values via direct instruction, often using specifically-designed programs and constant school management.

Titus (1994) suggested that the common features of schools are that they "seem to have a positive impact on the development of student values include participation, encouragement to behave responsibly, provision of an orderly school environment, and clear rules that are fairly enforced." Other researchers have found that a school's explicitness about its values, and the extent to which teachers actually practiced shared values had an important influence on students' values development.

Values education developed as an explicit and/or implicit curriculum which provides opportunities for students to: understand and compare values and beliefs they hold and others hold, look at evidence, from opinions and conclusions; discuss differences and manage conflicts in non-violent ways; discuss and consider different solutions to personal, social and moral dilemmas; recognize the complexities of defining right and wrong and discussing elements of power and the role of decision makers in the community; communicate their values and understandings in discussions and through their behavior; reflect on how their action may affect others; demonstrate responsibility and initiative.

Values education has a long history of development in China and Thailand. Both countries started to teach values education and manage its program in their schools for a very long time. As one part of curriculum management, Values Education management also involves three important processes of *planning, implementation, and evaluation.* (Saylor's Managerial Model; 1981)

According to Saylor's Managerial Model (1981), planning is concerned with the particular plans for individual programs of studies, courses of study, syllabi, unit plans, policy statements, handbooks, and learning packages used in different parts of the school and school district by many groups of people and individuals. Thus, curriculum had to be pulled tighter or incorporated as a total package, or "curriculum plan", by those in charge of running the schools.

Implementation is mainly concerned with instructional activities that facilitate or put the design in practice. It includes instructional methods, materials, and resources, often listed in a course of study, unit plans, and lesson plans, and often observed in the classroom as the teaching and learning process unfolds. Curriculum implementation includes supervision of instruction, teacher-supervisor planning and meetings as well as staff development programs.

Evaluation involves procedures for evaluating student outcomes and curriculum plans. Evaluative data become the basis for decision-making and planning among administrators. Administrators rarely engage in this type of evaluation; rather, they often delegate it to supervisors or outside consultants who report their findings to administrators, who, in turn have the option to communicate the findings to teachers, parents, or the community.

Values Education Management in Soochow University, China
Values education as a part of moral education, is taught even for the young ages in primary schools upward to colleges in China. Moreover, the present values education in China is also conducted by means of an explicit curriculum of the university's moral education and reflected in the university regulations as well. For example, the following are part of the items from ***The Basic Regulations of the College Students' Behavior*** delivered to every college student as the Chinese Ministry Of Education requires, which reflected values education implicitly.

1. Love homeland, love the people, and uphold the leadership of the Chinese Communist Party, study hard, ready to contribute to the socialist modernizations.
2. Arrive at the school on time, don't be late or leave earlier, no absence.
3. Pay attention to the class, think actively, complete assignments on time.
4. Persist in health exercises, actively attend any instructive activities.
5. Be active to join in laboring, cherish the fruits of laboring.
6. Live in simplicity with good living habits, no smoking, and no alcohol.
7. Obey the university regulations and the state laws, hew to the public order.
8. Respect teachers, get along well with students, be polite to people, no fighting and no name-calling.
9. Love the collective, cherish the public treasure, and don't do anything harmful to the people.
10. Be honest and modest, brave to correct any mistakes.

Also, each university or college will have their own school regulations for the students to obey. The regulations may differ from one school to another, but all still belong to the implicit curriculum of values education.

As for the explicit curriculum which contains the values education in the Chinese university, they are also diverse form time to time. Normally, there are some compulsory courses for the undergraduate students to study at different years in all of the universities in China. For example, freshmen have to study "Training of Morality" (34 hours); sophomores have to study "Theory of Marxism" (72 hours); juniors have to study "Theory of Maoism" (54 hours); seniors have to study "Outline of Thought of Deng Xiaoping" (60 hours).(source from: Soochow University students' academic Records, 2002, July). The learning hours may be different in different universities, but the above compulsory courses are the same and open to every student in all of the Chinese universities.

Apart from the university regulations and the compulsory courses, the other approaches to implement values education in most of China's universities (of course in Soochow University as well) are mainly dependent on the universities' administrators, who will be responsible to make plans, or organize various forms of activities, such as team-learning, debates, communion or meeting, and so on for the purposes of conducting values education through different ways. Generally, these school-based activities are planned by the university administrators according to the different time periods in a school semester or holidays in the year. The activities will be different in different universities, at different times, and even in different faculties.

For example, the following activities were conducted in the Faculty of Science and Technology in Soochow University (February-June, in 2004, designed by the faculty administrators):
 • The faculty administrators will organize activities like "A Values Education Learning Day" on the campus on each Wednesday afternoon in this month, on which day they promote "Values Education discussion" among the students and require the instructors to attend to communicate and discuss with them for the purpose of including the teachers and students to learn mutually and communicate actively.
 • On March 15th—the day of learning from LeiFeng (who is a historic communist and a moral model that the Chinese government set up a example to appeal to all the young to learn from him), the whole university will hold many activities, such as "The Exhibition of Historic Heroes Pictures and Herald Stories Learning" in the teaching building, "The Live Leifeng Spirits in Present Society" Video show, and also require each faculty to carry out "An outside Social Public Service" by organizing the students to enter the common people's family and provide them help as much as they can.
  •Team-learning, debates or discussion learning; such as learning "the school regulations", "the state law", "The CCP Spirits" or some important speech delivered by state leaders.
 • Students Communion or a faculty meeting on every Monday afternoon from 1:00-3:00; to report the students' recent thoughts, to solve mental confusions, to praise and set good examples, etc.
 • Outside visit to some local orphanages, welfare institutions, and even prisons to promote values education implicitly, etc.

Finally, as for the evaluation of this kind of values education, most Chinese universities (including Soochow University) are likely to use the way of values education score records for each student. In detail, the procedure of creating students' values education score records (sometimes also called "students' school performance or behavior records),

will go on as the following **Figure 2** shows: it will be continuously done by the administrators until the students finish his or her program and graduate from the university.
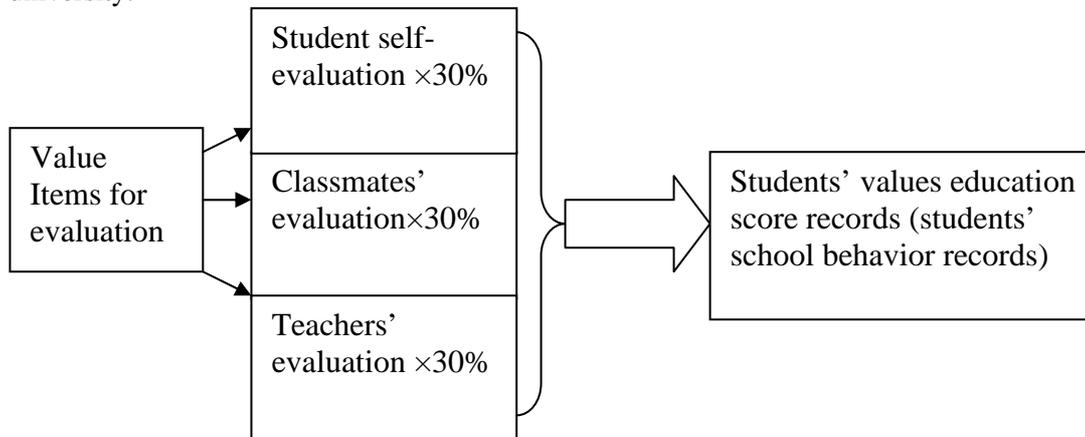
Figure 2 The Procedure of Creating Student's Values Education Records

Values Education Management Assumption University, Thailand
The present values education in Assumption University, Thailand is conducted by both implicit and explicit curriculums in the university. Above all, in order to have students with high qualities and good values at the beginning, for admission the university requires every applicant to submit two letters of recommendation from three different sources which will attest to the applicant's moral character and other good traits. Then, the university has *Vision for the AU Graduates* as a part of implicit values education for all the students to follow.

Assumption University of Thailand envisions its graduates as:
- Healthy and open-minded persons, characterized by personal integrity, and independent mind, and creative thinking.
- Professionally competent, willing to exercise responsible leadership for economic progress and in a just society.
- Able to communicate effectively with people from other nations and to participate in globalization.
- Serving society, especially through the creative use of interdisciplinary approaches.

Meanwhile, Assumption University also has explicit values education curriculums, because there are also many required courses of values education for students of each faculty to study, e.g. BG 2402 Ethics open at the undergraduate level. In the Faculty of Education, Morality and Educational Ethics course is offered for Graduate Diploma in Teacher Education and Ph. D. of Educational Leadership programs in Assumption University.

Together with the subject learning, values education in Assumption University is also embodied and implemented by various projects and activities, such as social work projects in the Faculty of Education; 16 sessions of the Seminar in Ethics for Business for Faculty of Arts and Faculty of Business students. All these projects, activities and

seminars are planed and implemented by university administrators and instructors to promote students' values education.

In the process of implementing values education, the instructors, the administrators (including the curriculum directors and faculty deans) are very significantly promoting to promote values education in terms of its program or activities planning, implementing, and evaluating. Instructors in Assumption University, as leader and manager must have the following qualities: competence, industriousness, service-minded, efficiency, moral encouragement, probity, consistency, and good mannerism (from *The Total Development of Faculty Members, AU*).

The Faculty Senate is the top management body, presided over by the President of the university, whose members consist of the vice presidents, Deans, and Deputy Deans, and Department Heads. It has many functions including exercises supervision and evaluation of any teaching and learning process (values education is one part) for both instructors and students.

The evaluation of values education in Assumption University is to concerned with the following parts during of the course of values education learning and teaching process: participation, honesty and transparency, accountability, legitimacy, efficiency, and effectiveness. The expectations of values education (Bro. Martin Komolmas, President of Assumption University, 2001) can be summarized as:

- Veritas = authentic or true. A Latin word which means authentic or true. An authentic student is ethically and morally sound.
- Caritas = love. Loving one another is a bond of relationship which leads to honestly, integrity, justice, and loyalty.
- Gravitas = good conduct. It is the outcome of being authentic and lovable. The student loves god and is a spiritual man.

In summary, in both Soochow University of China and Assumption University of Thailand, values education is required by university regulation; is taught by some compulsory or elective courses for different faculties and majors; and is embodied in school-managed activities. All the forms together are composed of the ways of values education management in the two universities.

RESEARCH DESIGN AND METHODOLOGY

Population
A total population of six hundred and thirty two (632) instructors was used in the study. In this population, two hundred ninety four (294) are from Assumption University; three hundred thirty eight (338) are from Soochow University.

Sample
The sample was selected in both universities by using "Stratified Random Sampling". The researcher used her judgment to select a sample which she believes, based on prior information, provided the data needed. The researcher asked all the sample instructors to

respond to the instrument. There were 165 instructors selected from Assumption University, and 180 instructors selected from Soochow University.

Instrumentation
A questionnaire was adapted from *the Commonwealth commissioned a national Values Education Study* which described the development of a Framework and set of Principles for values education in Australian schools in 2002.

Treatment of Data
SPSS version 11.5 was used in processing the data for ease and accuracy. Means and Standard Deviations; and t-test were used to fins and compare the perceptions of the actual /expected values education management in the two universities.

IV. Presentation, Analysis and Interpretation of Data
To analyze the data for **Objective Number 1**, Means and Standard Deviations were computed to determine the general perceptions of the instructors relative to values education management—planning, implementation, and evaluation in the two universities.

Perceptions of the instructors on the actual and expected values education in Soochow University.
Table 4 Summary of Means, Standard Deviations, and Interpretations of the SCU Instructors on Actual/ Expected Values Education Management (VEM)

The perceptions of the instructors SCU on	Actual VEM				Expected VEM			
	N	Mean	S.D.	Interpretation	N	Mean	S.D.	Interpretation
Planning	180	3.72	.78	Medium practice	180	4.59	.54	Much practice
Implementation	180	3.95	.62	Much practice	180	4.71	.45	Much practice
Evaluation	180	3.88	.64	Medium practice	180	4.65	.47	Much practice
TOTAL	180	3.85	.68	Medium practice	180	4.65	.49	Much practice

4.2 Perceptions of the instructors on the actual and expected values education management in Assumption University
Table 5 Summary of Means, Standard Deviations, and Interpretations of the AU Instructors on Actual/ Expected Values Education Management (VEM)

The perceptions of the instructors AU on	Actual VEM				Expected VEM			
	N	Mean	SD	Interpretation	N	Mean	SD	Interpretation
Planning	118	3.09	.91	Medium practice	118	3.98	.83	Much practice
Implementation	118	3.43	.89	Medium practice	118	4.27	.74	Much practice

Evaluation	118	3.06	.93	Medium practice	118	4.10	.63	Much practice
TOTAL	118	3.20	.90	Medium practice	118	4.12	.77	Much practice

4.3 To test Hypothesis 1: There are no significant differences between the two universities relative to the perceptions of the actual Values Education management.
Table 6 Independent Samples t-test Analysis of the Perceptions of Instructors on Actual Values Education Management (VEM) in SCU & AU

Actual VEM comparison SCU&AU	t-test for Equality of Means			
(equal variances assumed)	t	Sig. (2-tailed)	Mean Difference	Interpretation
Planning	7.866*	.000	.6288	Significant
Implementation	6.796*	.000	.5122	Significant
Evaluation	8.073*	.000	.6184	Significant
Total (actual)	8.533*	.000	.6531	Significant

*Sig. =.05

4.4 To test Hypothesis 2: There are no significant differences between the two universities relative to perceptions of expected Values Education management.
Table 7 Independent Samples t-test Analysis of the Perceptions of Instructors on Expected Values Education Management (VEM) in SCU & AU

Actual VEM comparison SCU&AU	t-test for Equality of Means			
(equal variances assumed)	t	Sig. (2-tailed)	Mean Difference	Interpretation
Planning	8.054*	.000	.6127	Significant
Implementation	6.483*	.000	.4381	Significant
Evaluation	8.244*	.000	.5506	Significant
Total (expected)	7.673*	.000	.5338	Significant

*Sig. =.05

V. FINDINGS, CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS
Findings
(1). In Soochow University, instructors' perceptions of actual values education planning and evaluation are described as "medium practice", on actual values education implementation as "much practice". However, instructors' perceptions of expected values education planning, implementation, and evaluation are described as "much practice".
(2). In Assumption University, the instructors' perceptions of actual values education planning, implementation, and evaluation are all described as "much practice". Also, instructors' perceptions of expected values education planning, implementation, and evaluation are described as "much practice".

(3). The general perceptions of the actual values education management as described by the instructors in Soochow University and in Assumption University are "medium practice".

(4). The general perceptions of the expected values education management as described by the instructors in Soochow University and in Assumption University are "much practice".

(5). Statistically significant differences between Soochow University and Assumption University on the perceptions of actual values education management were found.

(6). Statistically significant differences between Soochow University and Assumption University on the perceptions of expected values education management were found.

Conclusions

From the findings, the following conclusions are drawn:

(1). The general perceptions of the actual values education management as described by the instructors in Soochow University and Assumption University are "medium practice", In other words, in both Soochow University and Assumption University, the instructors thought they only have used "medium practice" as for actual values education management in the course of its planning, implementation, and evaluation processes.

(2). The general perceptions of the expected values education management as described by the instructors in Soochow University and in Assumption University are "much practice". This result means that in both universities, the instructors were expecting "much practice" of values education management regarding its planning, implementation, and evaluation, all of which should be conducted from now on in Soochow University and Assumption University.

(3). There are statistically significant differences existing between Soochow University and Assumption University relative to the perceptions of actual values education management.

(4). There are statistically significant differences existing between Soochow University and Assumption University relative to the perceptions of expected values education management.

Discussion

The following is a discussion of the answers to the questions raised in this study:

(1). What are the perceptions of the instructors on the actual and expected values education management in Soochow University and Assumption University?

First, as found in this study both in Soochow University and Assumption University, the instructors' perceptions towards actual values education management are described by "medium practice". This result indicated that most instructors in SCU and AU thought they only have used "medium practice" for actual values education management. However, both in Soochow University and Assumption University, the instructors' perceptions towards the expected values education implementation are described as "much practice", which indicated most instructors in SCU and AU were expecting that "much practice" of values education management regarding its planning, implementation, evaluation should be conducted in their university.

Chengzhi Wang (2003) supported, with extensive economic progress, the importance of Values Education as being more evident today than ever before. The concerns of Values Education have been evident especially during recent years in China, which has a long

history of promoting Values Education. Philip Hallinger (1998) also believed that in fostering educational change in these rapidly developing nations, creating learning systems that can ensure good values should be established in schools, especially in the higher educational system, and better management of Values Education should be developed by its administrators.

Second, from the comparison of means relative to actual/ expected values education management in Soochow University, the results indicated that the instructors in Soochow University had the perceptions of "much practice" towards actual values education implementation. Although their general perceptions towards actual values education management (total) in Soochow University were "medium practice", the instructors regarded present values education implementation as "much practice".

Yin Cheong Cheng (1994); supported that with the depth of education reform, the effectiveness of curriculum implementation change schools in China, which are characterized by the government's efforts to adapt and implement values education to meet national development needs.

Third, also from comparison of means relative to actual/ expected values education management in Soochow University and Assumption University, the instructors' perceptions of actual practice on Items 3, 6, 15, 48 are described as "little practice", for the means of these items were quite low. However, their perceptions of expected practice on these items are described as "much practice", for those means were quite high. Therefore, it could be concluded that most instructors in both universities have the eager to improve values education planning by reading and discussing values related to researches and state documents (Item 3); familiarize themselves with the procedures of planning to modify it for values education (Item 6); promote creative instructive activities to use (Item15); carry out more studies and research to guide values education planning (Item 48).

Rahimah Haji Ahmad (1998) supported the above findings in his research paper "Educational Development and Reformation in Malaysia: Past, Present and Future" which emphasized the teaching of values by good planning and study, and research pertaining to the present situation in order to enhance quality individual development as well as creating citizens of the future through values education.

For values education planning, the Commonwealth's Values Education Study (2003) in Australian schools also suggested that an outline of work be made from educational jurisdictions to identify appropriate teaching and learning resources, appropriate professional development and values education expertise, and resources to assess and evaluate the impact of values education programs for adoption and use by schools.

Fourth, from comparison of means relative to expected values education management in Soochow University and Assumption University, the results of this study indicated that Soochow University instructors' perceptions of expected values education planning, implementation, and evaluation (all 50 items) were described by "much practice". But, for AU instructors, their perceptions of expected values education planning, implementation, and evaluation described by "much practice" are only 36 items. The rest Item 2, 8, 9, 11, 14, 16 (planning); Items 33, 35 (implementation); Items 40, 42, 43, 45

(evaluation) were described as "medium practice". Therefore, the degrees of expectation on values education management were different in these two universities.

(2). What are the significant differences between the perceptions of actual values education management in the two universities?
The findings revealed that there was a statistically significant difference between Soochow University and Assumption University relative to the perceptions of actual values education management.

(3).What are the significant differences between the perceptions of expected values education management in the two universities?
The findings revealed that there is statistically significant difference between Soochow University and Assumption University relative to the perceptions of expected values education management.

(4).Why values education managements in these two universities are so different? In the researcher's opinions the reasons would involve the different environments of the two universities in different countries:
- The present People's Republic of China is the largest Communist country in the world with thousands of years of history, culture and traditions, including a long history of promoting values education. The traditional Chinese values education was developed from the ancient Confucianism which, briefly, was to believe that good character consists of knowing the good, desiring the good, and doing the good—habits of the mind, habits of the heart, and habits of action. The cores of Confucianism such as: Humanism, Benevolence, Kindheartedness, Loyalty and Consideration, Faith are actually doing the same work as identifying the appropriate values. In ancient China, Values Education Management was also beginning to be developed. During that time in China, values education was always planned and implemented by teachers through curriculum subjects such as *Ethics, Humanism* and so on. The evaluation of the students' values development was regarded as of first importance and required lifelong learning as well. With the extensive economic progress in many fields during recent years, the concerns of values education have been evident especially in China. Thus, the Chinese government and Ministry of Education came to strengthen values education for economic, cultural, or political reasons in every government university. Soochow is one of these government universities.
- Soochow University is a government university in China; it is under the authority and supervision of China's Communist Party. Thus, to some extent, the MOE and Chinese government tried to conduct many fixed modes of values education management for society and also for some political reasons, which each faculty has to follow. The administration work in Soochow University is centralized.
- Thailand is a constitutional monarchy with a King as Head of State and a democratic of government. Values education in Thailand also has had a long history. Thai people give importance to social norms and social acceptability more than to personal preference and feelings. They emphasize parental respect, and they are "respectful" of others (Krengjai), and show honesty and benevolence (Hasanakin, 1980). Buddhism has greatly influenced Thai people. With recent economic progress and achievement, Thailand is becoming a larger developing country in Southeast Asia.

- Assumption University is private and the first international university with Christian inspiration in Thailand. It's much more independent compared with Soochow University and other Thai public universities. Each faculty has more freedom to develop their own values education management in various forms. The administrative work in Assumption University is less centralized compared with Soochow University.

The study of Rahimah Haji Ahmad (1998) confirmed that moral and values education has always been recognized and acknowledged in the Asian school curriculums, which serve different nations, religions, histories, societal backgrounds, traditions and customs, economic and political situations.

Worapong Nijjarunkul (2002) supported these findings in his thesis named "A Study of Assumption University of Thailand Thai Student Values" (published in ABAC Library), that "Society, religion, environment and more international culture have influences on the Thai value system in Assumption University, Thailand."

In the Commonwealth's Values Education Study (2003) in Australian schools, it was concluded that for pursuing values education in schools, different statements of the vision, sets of guiding principles, approaches, teaching and learning resources, and expertise will result in different values education programs and traits of management in schools.

5.4 Recommendations for both universities
(1). **"Much practice"** in values education management should be conducted and promoted in both universities in the future regarding its key processes of planning, implementation, and evaluation since both universities' instructors had high expectations of future values education management.
(2). Both universities should strengthen values education planning. For example, instructors should read and discuss values related to research and state documents; familiarize themselves with the procedure of planning to modify it for values education; be encouraged to carry out more studies and researches to guide values education planning; promote creative instructive activities to use.
(3). Since values education has always been recognized and acknowledged in the Asian school curriculums, which serve different nations, religions, histories, societal backgrounds, traditions and customs, economic and political situations, an in-depth study is suggested. This study should be conducted relative to which factors influence values education management and how to maintain an appropriate values education curriculum and management at both universities.
(4). Further studies should include value education management concern with associated teaching strategies, facility adaptation, and community or parents cooperation, and so on, in further cross-cultural studies.
(5). While it is highly recommended to disseminate the results of this study to other universities in China or Thailand, it may still be of greater benefit to academia if similar studies were conducted in these respective universities and data is shared for mutual enrichment. This kind of study on Values education management should also be conducted in all universities in Asia.

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PRINCIPLES MEANS AND FORMS OF OFF-CAMPUS EDUCATION MANAGEMENT

Staporn Tawonatiwas and Phuangphet Tonawanik
Chandrakasem Rajabhat University Chainat Campus

ABSTRACT

This qualitative research aimed to study the principles, means and forms of off-campus education management of Chandrakasem Rajabhat University in Chainat. The data was collected by conducting focus groups, in-depth interview and questionnaire. The subjects are the director who is in charge of Chandrakasem-Chainat Education Center, representatives of private sectors, education-related local government organizations, parents, secondary school teachers and students.

The results of the study reveal that

1. Regarding to Education Management Principles, off-campus education management in Chainat by Chandrakasem Rajabhat University conforms to the principles of education management that it provides people in the rural areas opportunities to further their study in their hometown, and also provides opportunities for students with lower-average educational achievement to do so. The curriculum should be developed according to local necessity, with co-operation with local entrepreneurs to offer short-term professional training. The education management and instruction have to be co-operated and exchanged with other universities. And the government should take part in the education management of regional universities.

2. Means of Education Management Initially, modern styled buildings should be urgently constructed in order to motivate, entrust and pride students. The university compound and environment should be properly managed. Educational equipment and computers need to be standardized and adequate. The university website should be up-to-date and interesting. There should be more public relations. A demonstration school may need to be established. The curriculums should be variedly developed according to local interests and necessity. Consciousness of morality has to be emphasized. Educational funds or scholarship should be provided. Education administration and supports should be the same as that of the main campus in Bangkok. Academic demands of people in Chinat are **Sciences:** Engineering, Manufacturing Technology, Agriculture, Forestry, Medicine, and Nursing **Educations:** International Education, Education **Arts:** Communication Arts, Mass Communication, Computer for Business, Accountancy, Laws, Political Sciences, Public Administration, Fine Arts, Hotel and Tourism, Thai Language, English Language, Social Sciences, History, and Community Development.

3. Forms of Education Management Both undergraduate and graduate programs should be provided full time and part time. As for non-formal education, there should be a research and rural development center. Establishment of training and academic exhibition center, local information center, and professional training center should be done.

Students, parents and teachers in Chainat all agree with Principles, Means, and Form of education management at the high and highest level.

The overall result of the satisfactory study of current students at Chandrakasem-Chainat Education Center shows that the students are satisfied almost at the highest level. The five most satisfied are quality of officers, classrooms condition, academic measurement and assessment, and a variety of curriculums.

INTRODUCTION

Education management off-campus of Chandrakasem Rajabhat University, Chainat Started on January 2000 since committee formed. They surveyed the people needs and presented the project to University council to approved till the people government office and the governor gave title deed about 326 rais and 85 square wahs.

However during that time the University was opened 2 and 4 years Bachelor degree Curriculums by renting study rooms and offices from Chainat Technical College.

This research was important to fixed Principles Directions and Patterns of off-campus Education Management Chandrakasem Rajabhat in Chainat.

Objectives

This research aimed to study the principles Means and Forms of off-campus Education Management Chandrakasem Rajabhat University in Chainat.

METHODOLOGIES AND INSTRUMENTS

This qualitative research methodologies are **focus group interview** investigate and observe target group by interviewed key person from the fill of education. Participants of focus group were 13 persons from education private and local organization 1772 of students instructors and parents were **investigated**. About their **satisfaction and education management** to 130 students at Chandrakasem Rajabhat University in Chainat and Benchmark Chandrakasem **Rajabhat University in Chainat** with **Kasetsart Kumpangsan Kasetsart Sriracha Kasetsart Sakon Nakhon Silapakhon Petcharaburi Ajou Korea University and Monash London**

CONCLUSION

Finding revealed that:
1.   **Principles of education management**. The education management of Chandrakasem Rajabhat University at the off-campus locate in Chainat is administered based on the centralization principle. This provides students opportunities to study close to their houses including the law achievement students too. The curriculum development was done to conform to the local needs. Establish coorperation with private sectors to organize short-time training of professional skills. In addition there should be cooperation and exchange programs with other Universities and local educational organization.

Principles of education management

```
┌─────────────────────────────────────┐
│  Provides opportunities for student  │
│  in the rural area                   │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐
│  Communities and government should   │
│  take part in education              │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐
│  Curriculum should be according to   │
│  local necessity                     │
└─────────────────────────────────────┘
```
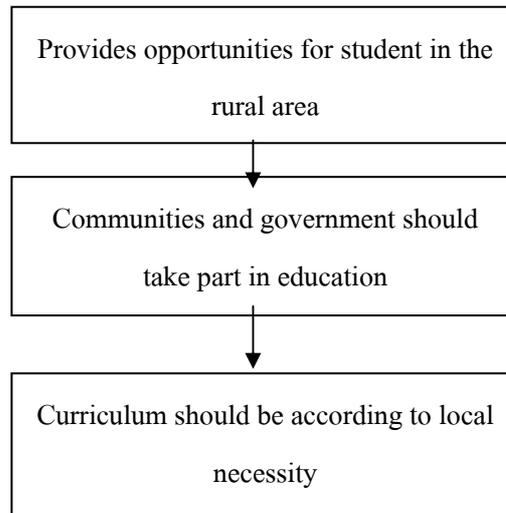
2.   Means of education management . It should start to construct utilized building for motivation confident and round to students. Extend area building and instruments. Information should be distributed by upgrade interesting website. Laboratory school may be constructed. Diversity curriculum was developed as interesting and local need by concentrate to conscious of moral. There are Fund for Education/good educational management/equity standard of activity and resource of education to main university.

Education needs of Chainat divided to 3 titles as follow : 1) Science : it was engineering Technology of Producing Agriculture Forestry Medicine and Nurse pharmacy 2) Education : it was International Education and Science 3) Liberal art : it was Political Science Public Administration Art Tourism and Hotel Thai Language Social Science History and Community Development.

Means of education management

```
┌─────────────────────────────────────┐
│  Building and Facilities             │
│  should be Construct                 │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐
│  Local organizations Cooperation     │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐
│  More Public relation                │
└─────────────────────────────────────┘
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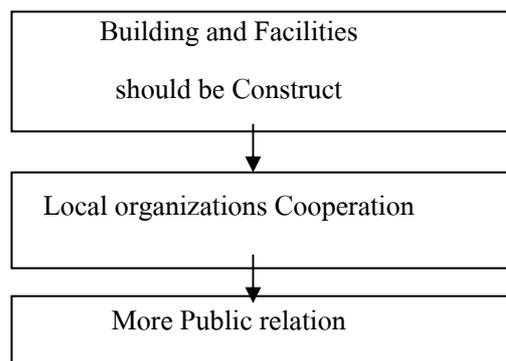
3. Forms of Education organization. Education in bachelor and master degree

Should be arranged full time and part time. For extra education system should had research and local development center training for presentation about academic exhibition local information center and vocational experience center

Student parent and instructor of school in Chainat province agree with
Principles means and forms of off-campus Education Management at more to most
levels at significant 0.5 except full time and part time/graduate and undergraduate
programs/training program in local institute /scholarship for students/cooperation with another universities and website update

Result of total satisfaction to bachelor educational organization at Chandrakasem Rajabhat University in Chainat was at rather more. The most highest satisfaction was :

1) Quality of instructor personal   2) Class situation 3) Evaluation and
measurement
4) Curriculum as need follow by tables 1-6

Forms of Education
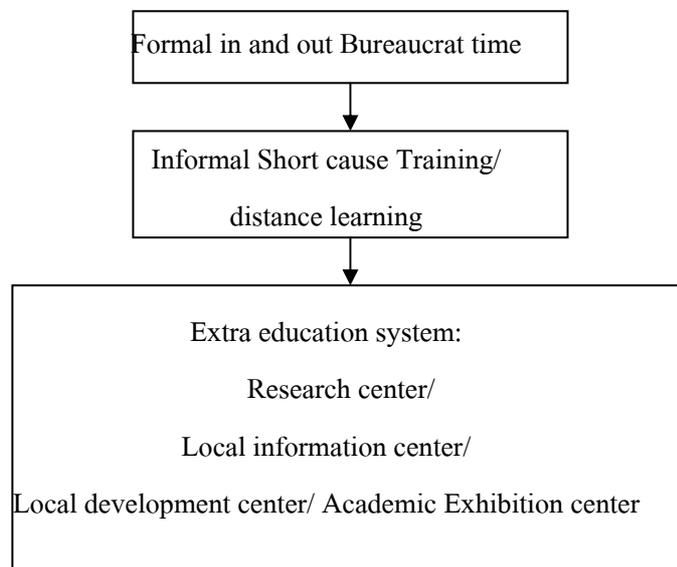
Table 1 Result of Instructor's opinion

Opinion	n	$\bar{x}$	S.D.
Formal education forms system in full time study	216	3.39	1.31
Informal education forms system in part time study	215	4.13	1.04
Informal education in distance learning system	215	3.65	1.15
The best time is afternoon and evening	216	3.45	1.23
The best time is Saturday and Sunday	216	4.33	.96
Set the training center	216	4.27	.70
Set short causes training in academic and vocational curriculums	216	4.37	.72
Set the local development research center	216	4.31	.73
Master and doctor degree curriculum	216	4.28	.79
Learning system by hands on in local area	216	4.49	.67
Set local curriculum	216	4.37	.71

Training system in public company	216	4.25	.80
Concentrate with moral awareness in education system	216	4.68	.61
Set community development activities	216	4.50	.67
Set local information center	216	4.38	.64
Set long life learning for the local people	216	4.43	.63
Set study fun for the student	216	4.43	.74
Set academic and vocational output exhibition center	216	4.37	.75
Government public and local organization take part of education arrangement	216	4.36	.74
Cooperative with another University to arrange education	216	4.32	.76
Education services met community needs	216	4.43	.65
	216	4.40	.68
Serve for community strength			
Extend knowledge of political and government in local area	216	4.45	.64
Standard of education management equal to main campus	216	4.56	.62
Build and update the University information website	216	4.47	.78
Total		4.28	0.79

Instructor of school in Chainat province agree with every issues. The most average was : Concentrate with moral awareness in education system /standard of education management equal to main campus and set community development activities at 4.68, 4.56, and 4.50 percent

Table 2 Parent's opinion

Opinion	n	$\bar{x}$	S.D.
Formal education forms system in full time study	169	3.84	1.07
Informal education forms system in part time study	169	3.60	1.01
Informal education in distance learning system	168	3.54	.97
The best time is afternoon and evening	169	3.36	1.10
The best time is Saturday and Sunday	169	3.74	1.18
Set the training center	169	3.98	.83
Set short causes training in academic and vocational curriculums	169	4.02	.86
Set the local development research center	169	3.91	.89
Master and doctor degree curriculum	169	4.17	.85
Learning system by hands on in local area	169	4.12	.96
Set local curriculum	169	3.99	.83
Training system in public company	169	4.12	.76
Concentrate with moral awareness in education system	169	4.31	.76
Set community development activities	169	4.09	.85
Set local information center	169	4.08	.84
Set long life learning for the local people	169	4.10	.78
Set study fun for the student	169	4.41	.83
Set academic and vocational output exhibition center	169	4.10	.80
Government public and local organization take part of education arrangement	169	3.97	.87
Cooperative with another University to arrange	169	4.08	.85

education

Education services met community needs	169	4.04	.84
	169	4.08	.85
Serve for community strength			
Extend knowledge of political and government in local area	169	4.11	.83
Standard of education management equal to main campus	169	4.30	.77
Build and update the University information website	169	4.40	.83
Total		4.02	0.88

Student's parents of school in Chainat province agree with every issues. The most average was : Set study fun for the student / Build and update the University information website/Concentrate with moral awareness in education system at 4.41, 4.40, and 4.31 percent

Table 3 Student's opinion

Opinion	n	$\overline{\text{x}}$	S.D.
Formal education forms system in full time study	212	3.93	.86
Informal education forms system in part time study	212	3.67	.95
Informal education in distance learning system	212	3.63	.95
The best time is afternoon and evening	212	3.35	1.12
The best time is Saturday and Sunday	211	3.70	1.13
Set the training center	212	4.15	2.15
Set short causes training in academic and vocational curriculums	212	4.07	.86
Set the local development research center	212	4.03	.83
Master and doctor degree curriculum	212	4.24	.85
Learning system by hands on in local area	212	4.20	.83
Set local curriculum	212	4.05	.86
Training system in public company	212	4.08	.79
Concentrate with moral awareness in education system	211	4.25	.76
Set community development activities	211	4.11	.84
Set local information center	211	4.08	.80
Set long life learning for the local people	211	4.09	.76
Set study fun for the student	211	4.46	.75
Set academic and vocational output exhibition center	211	4.14	.80
Government public and local organization take part of education arrangement	211	4.09	.70
Cooperative with another University to arrange education	211	4.20	.84
Education services met community needs	211	4.00	.80
	211	4.18	.80
Serve for community strength			
Extend knowledge of political and government in local area	211	4.19	.77
Standard of education management equal to main campus	211	4.32	.78
Build and update the University information website	210	4.32	.82
		4.06	0.9
Total			

Student's parents of school in Chainat province agree with every issues. The most average was : Set study fun for the student/Build and update the University Information website/Concentrate with moral awareness in education system at 4.46, 4.32, and 4.25 percent On the **Means** of education management The most average was : Standard of education management equal to main campus/Standard of education management equal to main campus and Cooperative with another University to arrange education at 4.32, 4.32, and 4.20 On the **Forms** of education management The most average was: Set the training center/ Set academic and vocational output exhibition center/Set local information center and Training system in public company at 4.15, 4.14, and 4.08 On the forms of education management the most average was: Formal education forms system in full time study at 3.93 percent

Table 4 Student satisfaction

Satisfaction	n	$\overline{x}$	S.D.
The constructs and equipments ready to study	130	2.96	0.92
Quality of instructors	130	3.62	0.83
Facilities	130	2.95	0.87
University public relation	130	2.84	0.80
Information technology Library and study medias service	130	2.31	0.99
Easy to search education information	130	2.40	0.97
Curriculum as local needs	130	3.16	1.03
Good study schedule management	130	2.96	0.92
Education management	130	2.95	0.81
Good adviser	130	3.00	0.95
Activity buildings	130	2.65	0.95
Cleanness wash room/study room/and all building	130	2.62	0.96
Easy to come	130	3.14	1.06
Enough Light	130	3.37	0.86
Room temperature	130	3.28	0.94
Room sight	128	3.05	1.02
Study information service	130	2.95	0.95
Training	130	2.98	0.80
Student activity support	130	2.88	0.90
Efficiency of education evaluate	130	3.23	0.80
Registration rate	130	2.60	0.87
Building and location	130	2.96	0.92
Quality of human resource	130	3.62	0.83
Facility organize	130	2.95	0.87
University Promotion	130	2.84	0.80
Total		2.86	0.87

Result of total satisfaction to bachelor educational organization at Chandrakasem Rajabhat University in Chainat was at rather more. The most highest satisfaction was: 1) Quality of instructor personal 2) Class situation 3) Evaluation and measurement 4) Curriculum as local need

Table 5 Compare idea about Formal education pattern system in full time study between student parent and instructor

	Formal education pattern system in full time study					Total
	Least	Less	Medium	More	Most	
Status *Student*	1	9	53	89	60	212
Parent	8	11	30	71	49	169
Instructor	30	19	52	66	49	216
Total	39	39	135	226	158	597
Chi-Square Tests					Sig. (2-sided) 0.05	

Student parent and instructor of school in Chainat province agree with
Principle means and forms of off-campus Education Management at more to most
levels at significant 0.5 except full time and part time/graduate and undergraduate
programs/training program in local institute /scholarship for students/cooperation with
another universities and website update

Table 6   Results of Benchmarking Chandrakasem Rajabhat University with Kasetsart University Sakon Nakhon/Kumpangsan/Sriracha Silapakorn University Petchaburi Monash University London and Ajou University

Benchmark	CRU.	KU. S.N.	KU. K.S.	KU. S.R.	SK. P.B.	Monash U.	Ajou U.
1.Curriculum According to local necessity.	-	/	/	/	/	/	/
2.Institue research.	-	/	/	/	/	/	/
3.Develop a Research center	-	/	/	/	/	/	/
4.Community research service	-	/	/	/	/	/	-
5.Student Competencies Development	/	/	/	/	/	/	/
6.Bhudism Activity	/	/	/	/	-	-	-
7.Infrastructure Development	/	/	/	/	/	/	/
8.Dormitory	-	/	/	/	/	/	/
9.Sport center	-	/	/	/	/	/	/
10.Computer System	/	/	/	/	/	/	/
11.Library	-	/	/	/	/	/	/
12.Architecture	/	/	/	/	/	/	/
13.Butgets	/	/	/	/	/	/	/
14.Income	-	/	/	/	/	/	/
15.Qality Insurance	/	/	/	/	/	/	/
16.Scholarchip	/	/	/	/	/	/	/
17.Exchange							

Programs	-	/	/	/	-	/	/
18.Local Information Center	-	/	/	/	/	/	/
19.University Goals	-	-	/	/	/	/	/
20.Culture	/	/	/	/	/	/	/

Direction and purpose off-campus **Kasetsart Kumpangsan** has directed to develop communities Agriculture such as: Agriculture Education and Science/Engineer/Veterinary/Animal and Animal Product Invented and Developed Institute/Agriculture Biotechnology Center/Elephant Care Center/Research and Development Center/Training Center

Direction and purpose off-campus **Kasetsart Sriracha** has directed to develop and look after sea environment such as: Environment Resources Faculty/Management Science/Engineer/Fishery Research Center link with Sriracha Beach Factories Tourism and Hotel.

Direction and purpose off-campus **Kasetsart Sakon Nakhon** has directed to develop 3 Faculty such as: Natural Resource and Agriculture Industry/Art and Management Science/Science and Engineer to serve North Eastern Part.

Every off-campus **Kasetsart** has direction to locate off-campus by developed curriculum as local needs set Research Institute/Training Center to serve academic information for teaching education and community learning/for student has competencies development/ Computers /Dormitory/Library/Sport and Activity Center concentrate on Buddhism Moral and Extended to be international.

For off-campus **Silapakhon Petcharaburi** has directed to develop Petcharaburi community such as: Community Product Design/Technology and Animal Science/Management Science coordinate with Thai sweet product/Design and management combine with produce resources for the process and concentrate in research information technology development and built Energy and Resource Saving Building.

Comparison with abroad university Ajou Korea and Monash London

Ajou Korea University has direction to be a leader in Engineer Technology and Language in Asia extend to Social and Human Science/Business Commerce/France/English by exchange program with France/Electronic/Engine Engineer/Fermentation Chemistry Engineer/Factory Management/Business Commerce/France/English in student center support student fun/exchange program. The environment concentrate on environment history and culture/built academic environment/computer/library/dormitory/ facilities and will be **Number Two University of The Country**

Monash London has direction to be a leader of International University. Concentrate on Learning Education and Innovation Research Quality. Curriculum development by participate manage and concentrate serving Information Website International Education Project/Exchange Program. Entrance system by TOFEL 550 points/IELTS 6 points. Support facilities/club information/dormitory/ sport/health/theatre/Academic Occupation and Money Advising Center

Summaries a comparative of Chandrakasem Rajabhat University

1.   Education management serve community needs in formal and informal system.

2.   The curriculum coordinate with community enterprises such as: construct engineer/community product design/management science/community organization management/community health/sustainable agriculture management/cooperative management/ community environment management/ community product development and Community wisdom Information Center.

3.   Arrange Community Training Center.

4.   Arrange Culture Center.

5.   Support Community Business Organization and local industry research.

6.   Build network and Community Information exchange.

7.   Develop academic environment and support facilities such as: library/information technology system/education medias/sport complex/dormitory/Buddhism center/student complex/arranged environment and culture

8.   Arrange exchange program with international organization.

SUGGESTIONS

The research toward: Principles Means and Forms of off-campus Education Management Chandrakasem Rajabhat University Chainat Campus.

1.   Settle research center and local producing center from agriculture product and short and long time training as local need for academic service and long life education.

2.   Set network of local public and private organization and enterprise to join curriculum development studying vocational experience training by linking with lecturer expert place and instrument for studying both theory and practice.

3.   Built network with local education institute level of province country and aboard in studying development about formal and non-formal education including Long life education.

4.   Develop integrated local curriculum by linking between local wisdom with technology and new innovation for adjusting studying toward conservation and develop about local wisdom.

Settle research /training and communities product center
Developed local curriculum as local needs
Adapted Local Technology and innovation to international
Built network in local province country and international education
Developed formal informal and distance learning
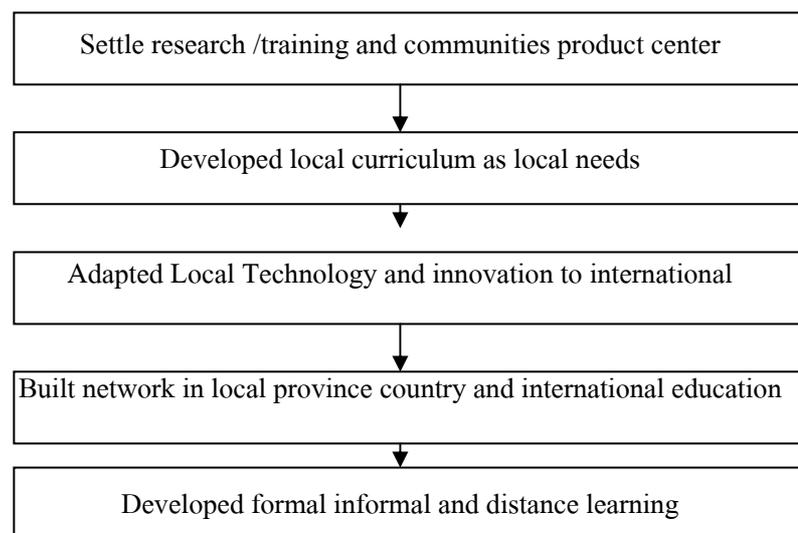
Suggestions

Public Administration/ Local organization management	Local information system Local information research center	General Local organization Local business planning and management business/ marketing research
Technology of Producing/ Local production Design Construction management	**Local curriculum**	
Local Farmer Child and Old age health projects development Development/Local nutrition	Training center Community product center/ another	Strategy Development Organization Agriculture and

community

Development   curriculums as needs   Business development

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SUB-THEME:

III. INSTITUTIONAL RESOURCES BASED ON SUFFICIENCY AND SUSTAINABILITY

USING THE ECONOMIC VALUE ADDED (EVA®) AS A FINANCIAL MANAGEMENT TOOL FOR A UNIVERSITY: CASE STUDY UNIVERSITY IN THAILAND

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ABSTRACT

This paper attempts to propose the uses of a financial management tool, the Economic Value Added (EVA®[5]) for a university. Although there are reports of widespread use of the EVA® in many for-profit organisations, there is no evidence in literature that it has been adopted as a financial management tool for a university or any other type of nonprofit organisation. In this paper the application of the EVA® for a university is proposed. It shows how the EVA® can increase the awareness of the importance of asset utilisation in universities and guide universities to better resource management. The perception of academic staff in the case study university in Thailand with regards to the concept of applying the EVA® to a university is further investigated. The results indicate that most management staff do not oppose this concept if it is implemented in a proper way.

INTRODUCTION

At present, there is a call for a change in financial measures, with academics and practitioners arguing that the traditional accounting measures are not enough and not related to value creation for shareholders. Therefore they are now moving away from traditional accounting measures and turning to what is called 'value-based measures'. Among these measures, the EVA® is found to be very popular (Young, 1997; Dodd and Johns, 1999; Weaver, 2001). Research indicates that among the performance measures recently introduced or being considered, the EVA® comes second only to the Balanced Scorecard (Minchington and Francis, 2000). It is widely used in more than 300 companies worldwide, including Coca-Cola Co., Quaker Oats, Briggs & Stratton Corp., Herman Miller, SPX Corp., and Siemens A.G. (Stern et al. 2001).

The EVA® is found to be less known in nonprofit organisations. This is not surprising, as the word 'profit' is directly opposite to the term 'nonprofit organisation'. This kind of organisation does not exist to generate profit for shareholders. It is established with other missions in mind that are not financially related. However the concept of the EVA® is somewhat different to the traditional concept of accounting profit. The EVA® does not focus only on profit but also on the cost of capital. Every organisation has to find a source for income, and nonprofit organisations are no exception. Therefore it can be argued that even in a nonprofit organisation, monetary income plays prominent role in its very

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[5] EVA® is a registered trademark of Stern Stewart &Co.

existence. Although, as previously mentioned, a nonprofit organisation does not attempt to generate profit, it still needs income to support its activities. Therefore in the case of nonprofit organisations, income is a mean to an end, not an end itself. Nonprofit organisations therefore need to focus on how to use income efficiently, by investing wisely to enable it to achieve its mission. Unfortunately, most nonprofit organisations rarely use management tools, as most of these are designed for for-profit organisations. This is also true for financial management tools such as financial ratios. There are very few nonprofit organisations that are interested in these ratios because they are usually based on accounting profit numbers, which are established to monitor the performance of a business corporation that aims to generate profit rather than for nonprofit organisations that exist for a totally different objective. However, this does not mean that all financial management tools are of no use for nonprofit organisations. The EVA®, as a financial management tool, is an example of a tool that can be used in nonprofit organisations. This paper aims to propose the possibilities of applying the EVA® to nonprofit a organisation, or to be more specific, a university.

Although there are many studies done in relation to the use of the EVA® (Stewart, 1991), none of those mentions the use of the EVA® for nonprofit organisations. This may be due to the fact that the EVA® is often commercialised by consultancy firms who aim to 'sell' the matrix to business corporations and also the fact that the matrix itself was created for business corporations, not for nonprofit organisations. This study aims to be among the first to present its use from a totally different angle. As mentioned earlier, in this study the EVA® is proposed to be used as a financial management tool for a university, which is a nonprofit organisation. This is interesting because university financial performance itself 'presents a complex set of problems for managers' (Pursglove and Simpson, 2001). The current measures for universities 'do not identify what action needs to be taken in order to improve future performance' (Pursglove and Simpson, 2004). Recent university league tables, especially those in the United Kingdom, only present a limited set of financial measures, mostly in terms of the facility, library, and computer spending per student (O'Leary et al. 2004; Leach, 2004). Although these tables provide useful information for readers, they do not help university management to identify the causes of problems. In matter of fact, if used improperly, those measures may lead to dysfunctional behaviour, as the university may try to raise its ranking by manipulating some numbers and ignoring any negative impacts that this might engender.

In this paper, the EVA® is introduced as a candidate for university financial management. This study is one of the first to apply a purely financial management matrix designed for for-profit organisations to a nonprofit organisation such as a university. The acceptance of this concept by university academic staff is also investigated. One university in Thailand, Thammasat University, is chosen as a case study in this research. There are two reasons for this choice. Firstly, in Thailand, a university is one of the largest nonprofit organisations in terms of number of stakeholders, which include students, staff, employers, and alumni. Therefore the study can make a very significant contribution. Secondly, there will soon be a major change in the Thai higher education system. According to Thai government policy, in the very near future, all public universities in Thailand are to become what is called an 'autonomous university'. As an autonomous university, the university will no longer receive the large level of funding from the government now budgeted. The government is encouraging universities to generate their own income and is giving the authorisation for universities to use that

income in any way that will further achievement of their mission. This change in the basic funding structure of each university means each needs to have a proper financial management tool, as now, for the first time, each university has to manage most of its own income. The EVA®, normally used for business corporations, is therefore considered a possible candidate for a financial management tool that a university can adopt, with some adjustments to suit the nature of a nonprofit organisation.

What is the EVA®?

The concept of the EVA® is not new and in fact has been around for many years. Residual income is an accounting performance measure calculated by subtracting capital charges from operating profit. The EVA® is one version of residual income with some adjustments. According to Wallace (1997), one of the earliest to mention the residual income concept was Alfred Marshall in 1890. Marshall defined economic profit as total net gains less the interest on invested capital at the current rate. Since this idea has been around for more than a century, the question is raised as to the reason behind recent publicity and praise among academics and practitioners. Earlier the concept of residual income was rarely used in companies. However, using the same concept but with some adjustments, the EVA® has gained wide publicity in recent years. The number of companies adopting the EVA® is increasing rapidly (Wallace, 1997). One reason that may explain why the EVA® has gained such popularity is that it is claimed to be closely related to stock prices (Stewart, 1991; O'Byrne, 1997). Its popularity may be also due to aggressive marketing by Stern Stewart & Co, the inventor of the EVA® system. The EVA® is also often called Economic Profit (EP) in order to avoid legal problems, as the term 'EVA®' is a registered trademark of Stern Stewart & Co. As the inventor of the EVA® system, Stern Stewart & Co. has acted as consultants for many companies in the United States, Europe and the rest of the world that then apply the EVA® for their financial management and incentive compensation.

Many EVA® companies claim that the EVA® is a very useful management tool. Coca-Cola, one of America's most enthusiastic proponents of the EVA®, earns impressive rates of return after adopting the EVA®, while the United States Postal Service claims that EVA® brings together all aspects of the business into one measure. Perhaps the strongest selling point of the EVA® is that those that adopt it tend to outperform the market and their peers (Stewart et al. 2002).

As noted previously, the EVA® is another form of a residual income. According to (Stewart, 1991), The EVA® is

> *A fundamental measure of corporate performance; it is computed by taking the spread between the return on capital and the cost of capital, and multiplying by the capital outstanding at the beginning of the year (or the average over year if that was used in computing the return on capital). It is the residual income that remains after operating profits cover a full and fair return on capital (i.e., the cost of capital).*

The formula is:

$$EVA® = (r – c*) \times invested\ capital$$

Where r is a return rate, which equals the net operating profit after tax (NOPAT) divided by the invested capital and c* is the cost of capital

This equation can be rearranged into

$$EVA® = NOPAT – cost\ of\ capital \times invested\ capital$$

If the EVA® is zero, it means that shareholders have earned returns sufficient to compensate for risk, which is an adequate achievement. If the EVA® is positive, shareholder value has been created, as shareholders have earned higher returns than the risk. If it is negative, shareholder value has been damaged.

RESEARCH QUESTIONS AND METHODOLOGY

As mentioned, Thammasat University is selected as a case study in this research. The objective of the study is to investigate the possibility of applying the EVA® in the University. There are two main research questions:

1. How can Thammasat University use the EVA® as a financial management tool?
2. What is the perception of Thammasat University management staff on the use of the EVA® for the University?

The research methodologies differ depending on the research question. For the first question, data for the concept of applying the EVA® to the University was gathered by interviewing experts who are also Thammasat University stakeholders. Ten in-depth interviews were conducted with the senior University management staff, academic staff, non-academic staff, students, and University financial supporters. The interviewees were carefully selected based on their knowledge of the EVA®. They were required to have in-depth knowledge of what the EVA® is and agree to participate in this study. The interviews were conducted face-to-face over the period of October 2002 to February 2003. The interviews took place Thammasat University, Bangkok, Thailand. All questions used in the interview were open-ended. This interview is considered a semi-structured interview, as the question structure was prepared ahead of the interview session. However the structure and questions are flexible and depend on the conversation between researcher and interviewees. Some questions are asked even though they were not previously prepared to gather more relevant data or eliminate confusion that might occur. During the interview, a tape recorder is used to record the conversation with permission of the interviewee. The researcher also made notes. After the interview, the tape was immediately transcribed along with the notes and the transcription submitted to the interviewee to assure correctness of the transcription. After gathering information from these stakeholders, the model of the EVA® is then constructed qualitatively based on their suggestions.

This model is then brought to management staff within Thammasat University to ask for their opinion. Management staff refers to both academic staff and non-academic staff who hold one of these positions: Rector, Associate Rector, Assistant Rector, Dean,

Associate Dean, Assistant Dean, Head of Department, Director of the institutes or centres, Head of supporting unit or any other type of unit. The reason behind the selection of only management staff is that these are the potential users of the model and are also responsible for establishing the performance measurement framework. The questionnaires were used to collect data on the perception of the application of the EVA® for the University. Before being used, the questionnaires were pre-tested by being distributed to academic staff in other universities to obtain comments regarding the questions and structure of the questionnaire.

Two hundred and fifty questionnaires were distributed to staff holding management positions at Thammasat University by mailing or hand delivery in August to September 2004. Ninety-one were returned, giving a return rate of 36%. After each questionnaire was received, it was immediately checked for missing answers and if any, the researcher then asked the respondent the reason the questions were not answered. Each questionnaire has its own numbered coding, and therefore can be tracked to each respondent, although the respondent's name is not given on the questionnaire itself. This helps make the follow-up process more convenient.

RESULTS OF THE STUDY

Based on the research questions and methodologies presented earlier, the results can be summarised as follows.

1. The model of the EVA® for a university

As previously described, even for a nonprofit organisation like a university, financial income is needed in order to help the organisation achieve its mission. For state universities in Thailand, income can be separated into two major sources: the government budget and income it generates itself. Depending on the university, the proportion of these two sources varies. Based on the nature of these funding sources, it can be argued that each university us actually two totally different types of organisation: the for-profit part, where most income is self-generated, and the nonprofit part, where most income is supplied by the government budget. This means the EVA® for universities must be carefully designed to suit each part.

1.1. The EVA® for the for-profit part of a university

The for-profit part of a university generally generates income through business units. Examples of these units include the executive training programmes that are established primarily to generate income for the university. In fact, one of the main criteria to judge whether to launch a new programme is its expected profitability. Therefore these business units within the university are more like a for-profit company than a nonprofit organisation. The income generated through these business units is then invested back into the university.

At the present time, the performance of most business units within Thammasat University is not properly monitored. These business units are simply established because the sponsoring department, institute or faculty claims that it can generate income for the

University. However, frequent questions are raised as to whether it is worth creating new programmes to generate income because that programme at the same time consumes University resources. This problem is not being addressed, as there is no appropriate tool to judge whether it is worthwhile or not. The only tool that is used to judge the appropriateness of the establishment of a new programme is its expected income; the tool that is currently used to monitor that programme is budget control.

To address the current problems, the EVA® can be used to measure the financial performance of business units within the university. As previously described, the EVA® is operating profit less charge for the use of capital. By evaluating the programs that aim to generate income for the university against the EVA®, management analysis will be simple and make it possible for management to make the correct decision as to which competing programmes to allocate resources to. The best programme is one that generates a profit without tying up many resources. The income generated by the programme will not then be the only measure, as it is now. Capital or resources put into the programme is another measure that management should consider. An example of an EVA® calculation is provided to show how the EVA® can be used in a university.

In this example, a university has three programmes competing for resources. However, as always, the university has only limited resources. Therefore, management must decide where to allocate the resources. The information provided to management is as follows.

Programme A

- Expected net operating profit after tax (NOPAT) – £1.2 million
- Investment needed – £10 million

Programme B

- Expected net operating profit after tax (NOPAT) - £1 million
- Investment needed – £7 million

Programme C

- Expected net operating profit after tax (NOPAT) – £1.5 million
- Investment needed – £20 million

Assuming the cost of capital for the university is 11%, or in other words, the university can invest its money in alternative options at same level of risk, such as in government bonds as previously described and can earn a return of 11%. Now the question is that if a university has available funding of £40 million for future investment, what path should it take?

At the present, when programmes are judged only on expected profit, the answer is simply to invest in all programmes, as they are all profitable. Or if there is not enough funding for all three, programme C is preferable to programme A and B because it produces the highest profit. However this leads to an erroneous conclusion, because if the

university invests in all programmes, it will need a total of £37 million (£10 plus £7 plus £20) and obtain returns of £3.7 million (£1.2 plus £1 plus £1.5 million). The total rate of return is therefore 10% (£3.7 million divided by £37 million). Consider the other alternative: the university can easily earn 11% simply by investing all available monies into government bonds. Therefore, why should the university take the more arduous task of creating new programmes when the return is less?

Now it is obvious that investing into all three programmes, in what initially appeared to be a good option based on expected profitability, is in truth not the best choice. The question still remains as to which programme the university should invest in, or whether it should invest in none. By calculating the EVA® for each, this question can be answered easily.

Using the formula,

EVA® = (r – c*) x invested capital

Where r is a rate of return equal to NOPAT divided by the invested capital and c* is the university's cost of capital

If we assess each case, we find that programme A generates a return of 12% (£1.2 million divided by £10 million), programme B generates a return of 14.29% (£1 million divided by £7 million), and programme C generates a return of only 7.5% (£1.5 million divided by £20 million). Therefore the EVA® of each programme can be calculated as follows:

EVA® of programme A = (12% - 11%) x £10 million = £100,000

EVA® of programme B = (14.29% - 11%) x £7 million = £230,000

EVA® of programme C = (7.5% - 11%) x £20 million = -£700,000

Based on this calculation, programme B is the best option, as it generates excess income of £230,000; programme A comes second, with excess income of £100,000. Programme C is not an attractive choice. Although it generates profits of £1.5 million, its EVA® is negative. That means that university could obtain a higher return simply by investing available monies in other alternatives. The university should thus turn down funding programme C. This conclusion is totally different than calculations based on profit alone, as previously described. As a result, the EVA® is certainly a useful tool to helps university management arrive at the most optimal decisions regarding allocations of its limited resources.

1.2 The EVA® for the nonprofit parts of a university

For the nonprofit portion of the university, such as undergraduate academic programmes, NOPAT seems irrelevant but capital charge is relevant. For a university, it is seen on any ranking or league table that spending on information technology, library, and facilities count as a major criteria in judging whether any one university is better in terms of learning support (O'Leary et al. 2004; Leach, 2004). However, this does not address the

question as to whether this is a good proxy for 'good learning support'. Investing in computer facilities, for example, does not always mean that students or other university stakeholders have good learning support - if very few people have access to the facilities. One can also argue that a university that invests heavily in facilities and where facilities are good is still better than one without. This argument is questionable when taking into account the fact that universities have a limited amount of resources. If money is put into facilities that few people benefit from, it could be better used in other areas, such as providing scholarships to attract good students or increasing salaries or benefits to recruit the best people to the university. At present, universities are judged only by the size of their assets (capital). A university with large assets or substantial spending on infrastructure is considered a 'good' university. As a result, universities tends to put much into their facilities without giving good attention to how much the facilities are going to be utilised. This in the end leads to low asset utilisation in some universities. Staff and students are also using facilities, as it is a 'free' resource. Staff will be satisfied to see computers and printers in their rooms, even when they are not used. Students prefer more computers even though the utilisation rate of existing computers is still very low. The university is satisfied to see its ranking rise because of its spending on the underutilized facilities. This will surely create problems.

By applying the concept of the EVA® in such a way that assumes every asset in a university has its associated costs, there is created at sense of 'leasing'. Staff are no longer satisfied to see computers and printers in their rooms if those facilities are not fully utilised because they have become aware that these resources have an associated cost, for which they are responsible, whether or not the resources are used. Students no longer ask for unnecessary resources because they might be charged for that after the university becomes aware of costs. Universities will no longer be satisfied with merely investing in 'anything' they want, because by increasing the size of assets, the capital charge also goes up, and if the university is judged based on this capital charge, it will be very careful about what it invests in.

At this point, one can argue that if the nonprofit parts of a university are measured in terms of this cost of capital, the university will no longer invest in its facilities or even liquidate a much of its assets as possible. This problem would never arise in a for-profit organisation because the capital cost is measured against net profit. Decreasing assets might have an effect on profit. Therefore, in the university context, especially the nonprofit part, the challenging question is what the capital cost should be measured against.

For the nonprofit parts of university such as the undergraduate academic programme, the objective is not to generate income. Its mission is to educate students to become good citizens and serve society. This is where the difficulty comes into the calculation. Measuring cost is easy, but trying to put social benefits in financial terms takes much more effort. However, this can be resolved.

Firstly, effort can be exerted on identifying the financial value of objectives of nonprofit units. For example, if the objective of the academic programme is to educate students to become high-quality citizens, this can be measured in terms of percentage of employment. With effort, the 'financial value' of the employment of graduates can be

assigned. It is always possible to find financial value in non-financial measures and has been done even in for-profit organisations. Brand value, goodwill, and valuation of intangible assets are good examples. However the difficulties still remain. Those particular intangible assets can be valued in a company because there is a market that justifies those values. For example, the difference between market value of the firm and its book value (value of tangible assets) can be a proxy measure of the firm's 'value of intangible assets'. Unfortunately, although it is not too difficult to assess the book value of a university, it is very difficult to identify its market value. One possible method of ascertaining the market value of a university is to conduct research and obtain opinions of all university stakeholders in order to identify the value of the university or the financial value of the benefits that the university generates. However even the experts will find it difficult to answer questions like 'what is the financial value of the high employment rate of graduates that could act as a proxy for a high-quality graduate, which is one of the university's objectives?' Resolution, although possible, is very difficult to achieve. It is also time consuming and cost may be higher than the benefits.

A second solution is built upon the argument that it is not necessary to quantify the financial value of non-financial measures. Originally the idea of putting the non-financial benefits of the university into financial terms was based on the fact that in the EVA® formula, two terms, NOPAT and capital charge, must be in the same unit otherwise they cannot be subtracted. As noted earlier, the capital charge is calculated in financial terms. However NOPAT is not the main objective of a university. It is other missions, such as educating the country's future leaders that is the main goal. As a result, there is an attempt to value non-financial measures that reflect the mission of a university. It is actually the formula of the EVA® that forces this conversion, which seems to be time and cost consuming.

Instead of spending a great deal of effort trying to quantify the financial value of non-financial measures, one can go back and consider the formula. Is there another way to calculate EVA®? The answer is probably yes, although it may no longer be the traditional 'EVA®'. Coming back to the formula of the EVA® calculation, one can rearrange it into the form of the ratio of NOPAT and capital charge. In this sense, it can be called the Ratio of the Economic Value Added (Ratio of the EVA®) instead of the 'Economic Value Added' as it is originally termed. The formula:

Ratio of the EVA® = NOPAT / Capital charge

The elements and details of calculation remain exactly the same as for the EVA® except that these two terms are presented as a ratio instead of the difference between the two. The meaning of the number also changes. For the traditional EVA®, the surplus EVA® means a company is creating added value to shareholders (NOPAT is higher than capital charge) but in terms of the Ratio of the EVA®, this happens when the ratio is higher than one. Therefore, for the EVA® the breakeven point is zero, while for the Ratio of the EVA®, the breakeven point is one. It is the interpretation that is changed, while the concept remains exactly the same. The only weakness of the ratio format is when the denominator is zero, but this will never happen in this case. Capital charge will never be zero because if it is zero, it means that the organisation does not have any capital or assets or that its cost of capital is zero, which would be very unlikely.

Coming back to the case of a university, the main reason to adjust the formula of the EVA® into the Ratio of the EVA® is to accommodate calculations. Now it becomes obvious that the calculations are no longer limited by the difference in units, because it is in the form of a ratio. This will enhance the ability of the EVA® to be used in the non-financial sector. The numerator no longer needs to be in financial terms. It can be anything that reflects the goal of an organisation, such as NOPAT, which is the goal of for-profit organisations. The denominator in this case becomes the summation of the capital charge and the expenses that are associated to produce the outcome. This is the other point that is different from the calculation of the traditional EVA®. NOPAT is income with expenses subtracted, with capital charges further deducted from NOPAT, making it the traditional EVA®. There are actually three terms in the EVA® calculation: income, expense, and capital charge. What a company requires is a higher EVA®, which means higher income with lower expense and capital charge. But again, these terms in the traditional EVA® calculation are not in the form of a ratio, which is no problem as they are all financial terms and can be subtracted.

In the calculations in a university context there are also three elements, as follows:

- Objective of the university (equivalent to income for company)
- Related expense
- Related capital charge

These three elements are put in the form of a ratio by placing the university's objectives into the numerator and expense and capital charge into the denominator. This is similar to the calculation of the ratio of the EVA® but more academic-oriented. It is therefore called the 'Academic Value Added Ratio' (AVAR). In the formula

$$\text{Academic Value Added Ratio (AVAR)} = \frac{\text{Objective of university}}{\text{(Expense + Capital charge)}}$$

The AVAR is therefore able to answer the question raised before. Now the university cannot simply liquidate or decrease its assets or capital without considering the output. By decreasing its assets, although the capital charge will be lower, it might have considerable impact on the university's objectives and the AVAR will never improve. Although the AVAR seems very similar to other productivity measures, i.e. measures of output and input, it differs because it applies the concept of capital charge. A measure such as number of graduates (university output) divided by operating expense is a common measure for universities. However, a university can manipulate this easily by investing into assets that can reduce operating expense. For example, if a university is currently leasing computers for staff and students, lease expense becomes an operating expense. As a result, in order to increase productivity measures (in this case number of graduates per operating expense), the university can simply invest in computer facilities by buying its own computers instead of leasing. This will decrease the operating expense and produce impressive numbers for that productivity measure. The university will also gain by appearing to have good 'learning facilities' when simply looking at computer spending. Changing from leasing to buying computers affects that measure in a much better way for a university. As a result, it is not surprising to find that some universities tend to 'buy' things rather than to 'lease' them. However if AVAR is used as a

performance measure, it now does not matter whether the university leases or buys computers. The decision – whether it is an operating expenses or a capital charge - will still affect the denominator of the calculation. The university will then buy computers only when its capital charge is less than its leasing expense. This is a wise decision, because a lower capital charge means computers are cheap enough to buy (less capital investment) compared to leasing.

The numerator now can be anything that reflects the university's objective. It can be the number of graduates employed after graduation (reflecting quality of graduate) or the number of publications in top-rated journals (reflecting quality of research). By applying the AVAR, the best university is no longer the university that spends much but is the university that spends less and obtains impressive results, such as high quality graduates and research.

2 Perception of academic staff on the use of the EVA® for university

Based on data provided from the questionnaires distributed to management staff in the University, most are not satisfied with the existing performance measurement framework. They believe that a new performance measurement framework is urgently required. In terms of awareness and knowledge of EVA®, 44% have heard the term 'EVA®' but only 3.3% know it very well. When asked whether the EVA® should be implemented within Thammasat University, most (54.9%) neither agreed nor disagreed, while 25.3% indicated that it should be implemented and only 9.9% opposed this concept. For those opposing the concept, the main reason was that the university's objective is not to maximise profit, as some staff see profit as being the important element in EVA® and the concern that the existing accounting system does not allow calculation of an accurate EVA® for the University. Table III shows the perception of the implementation of the EVA® for Thammasat University.

Topic	Results from questionnaires
Satisfaction with the existing performance measurement framework	Very satisfied – 2.2% Satisfied – 16.5% Neutral – 31.9% Unsatisfied – 36.3% Very unsatisfied – 9.9%
Urgency of new performance measurement framework	Very urgent – 22% Urgent – 42.9% Neutral – 19.8% Not urgent – 9.9% Not urgent at all – 1.1%
Awareness and knowledge of EVA®	44% have heard the term 'EVA®'. 3.3% know it very well.

	26.4% know only part of it.
	14.3% do not know what it is.
Should the EVA® be implemented within the University?	25.3% agree
	54.9% neither agree nor disagree
	9.9% disagree

Table III Perception on the application of the EVA®

These results suggest that most management staff do not oppose the use of the EVA® in the University, although they have limited knowledge of the EVA®. This is probably because they are not satisfied with the existing system and expect a new system to be applied as soon as possible.

CONCLUSION

Although the EVA® has been widely used in many companies, it is rare to find it applied to nonprofit organisations. This study is among the first to present the uses of the EVA® for universities. The study includes a model of the EVA® for both for-profit and nonprofit segments of the university. For the for-profit segment, the EVA® can help management allocate resources to competing for-profit programmes, allowing them to determine that resources should only be allocated to programmes that have a positive EVA®. Nevertheless this does not mean that management should not invest in negative EVA® programmes in all cases. If there are good non-financial reasons for such a programme, such as to build connections with the business world or to promote the university, resources can still be allocated to those programmes. However even in this case, the EVA® can be used to justify and rank the attractiveness of the programmes.

For the nonprofit segments of the university, the adjusted EVA® or AVAR can help the university better utilise its assets. The concept of capital charge makes everyone aware that every asset has an associated cost. By measuring against the nonprofit objectives of the university, management needs to balance between capital charges plus expenses and the objective. The aim is to maximise the AVAR, or, in other words reach the objective with a minimum capital charge and expense.

This concept is taken to management staff at Thammasat University. The results reveal that management staff do not oppose the use of the EVA®, probably because they urgently feel the need of a new system, as the current one is no longer appropriate. However more research on its implementation in the university setting are needed. It is believed that this study can be taken as a starting point for further research in this area.

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DELIVERING ACADEMIC SERVICES AT REGIONAL LEVEL: PERCEPTIONS FROM THAI PUBLIC UNIVERSITIES

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ABSTRACT

The role of higher education institutions in making a major contribution to economic and social development has considerably increased in Thailand during the last decade. In addition to teaching and research, academic service to society and the promotion of artistic and cultural affairs have become important tasks of higher education institutions, especially public universities. Every institution interprets the term "academic service" and the scope of society to which that service is delivered in its own way. This paper looks at academic service undertaken in Thai public universities and the delivery of service to society at regional level. A region is defined as a direct environment of the university within which the university is located; the university is surrounded by the regional economy and society. This paper demonstrates that there can be a number of ways that public universities identify the region to which they belong and that perceptions towards performing and delivering academic service to the region can vary widely by institutional type and by academic discipline. The paper also discusses issues regarding academic management and the factors that influence the performance of academic services in public universities.

INTRODUCTION

Following the major economic downturn in 1997, higher education institutions in Thailand were questioned about what they had been doing before the crisis happened; they had been expected to be the sources of knowledge and to be able to serve a leadership role in Thai society (Sinlarat, 2004). With national economic problems came a sense of failure in higher education and frustration with the contribution made by universities. Since the down turn, higher education institutions in Thailand have been expected to increase their role in making a major contribution to the economic and social development of the country. Accordingly, the four main tasks of Thai higher education institutions stated in the recent national policy are teaching, research, academic service to society, and promotion of artistic and cultural affairs (OEC, 2003;ONEC, 2002). This paper is concerned with academic services to society undertaken in public universities and is based on a study conducted in three leading public universities in Thailand.

The paper looks at academic services undertaken and delivered to society at regional level. Every university identifies the scope of the region by which it is surrounded in its own way. The role of the public university in the region is of major significance; each university is located in a region and is connected to its regional economy and society. Within the region, public universities have a particular responsibility with consequent expectations. How are these responsibilities seen in practice? How do academic staff and

university managers perceive this activity, especially in relation to teaching and research? Are these activities in conflict or are they complementary?

This paper indicates different approaches that public universities in Thailand employ in identifying their region, in articulating the significance of the region to the university, in delivering services to the region, and in pursuing issues of academic management regarding service to society from the perspectives of senior managers and academic staff in the university. Whilst based on a study of Thai universities, this paper may also throw some light on the role of universities in regional development in developing countries more generally.

Background

Public universities form the largest proportion of higher education institutions in Thailand. According to the recent database provided by the Commission on Higher Education, Ministry of Education, the total 66 public universities in Thailand comprises of 2 open-admission universities, 4 autonomous universities and 60 state-administered universities. Of those 60 state-administered institutions, 18 obtained university status when they were founded; the other 42 institutions were former colleges, named "Rajabhat institutions", which were upgraded to university status in 2004 (OEC, 2006).

Academic staff perform functions in accordance with the four main tasks of the university. The criteria for appointment to academic positions assume that academic staff will perform each of these functions: teaching, research, academic service to society, and promotion of artistic and cultural affairs. Considering academic positions in the promotion system, every new member of academic staff starts working in their academic career without an academic position; new academic staff have the title Lecturer. When they have worked in the institution for sufficient time, complemented by sufficient accumulated academic works, they will be evaluated for promotion into academic positions those are Assistant Professor, Associate Professor, and Professor, consecutively. In general, in order to be promoted to a higher academic position, academic staff will need to show that they have satisfied the requirement of performing each of the four main tasks. Then, the evaluation and judgement will be mainly based on the performance of their research rather than weighted by an average of the overall performance of the four main tasks.

REVIEW OF LITERATURE

Public universities in Thailand have been developed in response to the needs of Thai society in the past. The role in the society of public universities has been expected to be a provider of knowledge, able to support the economic and social development of the country (Sinlarat, 2004;Watson, 1989). Similar Thai universities, history has shown that American universities have had a strong bond with their society. Literature has shown that service to society can be conducted in a number of forms including medical centres, lifelong learning programmes, research cooperation between the university and industrial sector, and community economic development centres (Kezar, 2005;Shattock, 2003;Chatterton and Goddard, 2000;Duderstadt, 2000)

However, in 1997, the major economic downturn happened in Thailand with no prior warning from any universities or any other higher education institutions. These institutions were questioned about their status of being the knowledge providers in society; a number of concerns were raised, in particular, for public universities that used state funding to form the majority of their budget. Accordingly, since that time, a proactive role in delivering service to society has become an important issue in Thai higher education institutions. This sense of previous failure and the need to contribute to national rebuilding has had a critical role in shaping activity in universities today.

Although delivering service to society has become important, understanding of this task among institutions is uncertain. Every university interprets the term "service to society" in its own way including the scope of society, the services to be undertaken, to whom the services should be delivered, and how to deliver the service. In addition, there is no widely accepted scale with which to measure the performance and effectiveness of service to society, in either quantitative or qualitative terms.

Teaching and research are widely considered the core business of the university while service to society is, sometimes, considered a distinct function. In Thailand, although public universities have been founded on the basis of meeting a public purpose, academic society is somewhat distinguished from surrounding society. Similarly, although American universities have claimed to have a strong bond with the society, the delivery undertaken of services is sometimes administered by distinct departments developed within the university with only 'peripheral ties' to academic programmes in the university (Duderstadt, 2000: 135).

Literature shows that service to society should not be distinct from other forms of the university's core business; teaching, research and service to society should be undertaken in harmony. In this way, applied research and teaching programmes are considered important tools to embed service to society within the academic activities of the university. In order to make use of the knowledge produced in the university, relationships between the university the industrial sector in the society complemented by support from the government are claimed to be a good influence (Shattock, 2003;Duderstadt, 2000;Clark, 1998). However, according to Kezar (2005), that research funded by the industrial sector may lead the university and academic staff to have conflicts of interest in their academic values due to the conditions of funding. Here is a fundamental tension that is underlying higher education in Thailand and in many other countries.

As stated before, service to society at regional level is the focus of this study by reason of the region is recognized as the 'direct environment' of the university (Sijde and Schutte, 2000:7). According to Sijde and Schutte, delivering service to society is 'the unique response to the environment of the university' (2000:7). Similar to Sijde and Schutte, Shattock (2003) sees the region as the origin of 'locational factors' for the university, and provides stimulus for the university being 'drawn into contributing to regional agendas' (Shattock, 2003:115). Although the region in general is an outcome of location, the scope of region is not always easy to define; delivering academic service at regional level therefore depends on the university's perception of region and on how they define the term 'service' and the scope of regional society.

RESEARCH METHODOLOGY

This paper is based on a study conducted in three leading public universities in Thailand using documentary analysis and interviews. The study employed purposive sampling for sample selection. On this basis, three public universities and interview participants in each university were selected. The three universities in the study were state-administered public universities having obtained university status at the time of their foundation. They were comprehensive universities with a similar age, size and range academic disciplines. Academic programmes provided in the three universities were divided into three groups: Social Sciences and Humanities; Science and Technology; and Health Sciences.

The study was concerned not only with the views of academic staff in undertaking the service function, but also with the perceptions of university managers involved with oversight of this function. The criteria for the selection of interview participants were administrative position, academic position, and the academic background of each participant. As a result, three comprehensive public universities were selected with eight interview participants from each university. The participants from each university consisted of: two university managers, including either the President or Vice President; two lecturers; two Assistant Professors; and two Associate Professors from a variety of academic backgrounds.

Documentary analysis was based on government reports and publications on higher education supplemented by recent annual reports from each university. Content analysis was employed as the strategy for data analysis of both documentary analysis and interview transcriptions. The content analysis strategy was selected in order to facilitate the study for the analysis of data in this systematic predetermined context (Bryman, 2004). The context of the study covered scope of region, perceptions towards regional society, the performance of academic service to society, and academic management of the university. The content analysis approach therefore enabled the researchers to identify categories that emerged from the data, based on the theme and context of the study (Spencer and Ritchie, 2003).

Case universities

As mentioned in the Research Methodology section, this paper is based on the study conducted in three public universities. Hereafter, these three universities will be referred as University A, University B, and University C.

University A is one of Thailand's first five universities. The University is located in Bangkok which is the capital city of Thailand. Bangkok is known as Thailand's centre of commerce, politics and culture. The first universities in Thailand, including University A, were founded in Bangkok in response to the needs of Thai society the past. The first universities in other regions were established thereafter. University A comprises four campuses: the two major campuses are located in Bangkok and the two minor ones are located in the East and the North region of Thailand.

University B was the first university founded in the South of Thailand. The University operates five campuses located in five different provinces within the Southern region. Southern Thailand presents the uniqueness of geographical, social and cultural characters.

This region is a seaside landscape. The key economic activities are mining, agriculture, marine commerce and the tourist industry. The majority of Southern residents are Muslim; traditions and cultures in this region are significantly related to the religion of Islam.

University C was the first university founded in the North of Thailand. University C operates only one campus which provides a wide range of academic disciplines. Thailand is included in an economic and social community known as the Mae Kong River region, together with neighbouring countries including Laos, Vietnam, and part of Southern China. University C lies within this region.

Performing service to society

Although teaching, research, service to society, and promotion of artistic and cultural affairs were addressed as the four main tasks of Thai public universities; all three universities in this study stressed that research was considered their highest priority due to their university intended to move towards being a more research-oriented university. This emphasis on research reflected perceptions about institutional status and competitive forces. However, considering all the four main tasks those were needed to be undertaken, all three universities attempted to perform these tasks in harmony. This idea was communicated throughout the institution. The systems of performance evaluation and the system for appointment to academic positions of academic staff were in accordance with all of the four main tasks; pressure on academic staff and the university to extend research had increased significantly.

Considering the service to society function, all three universities expressed that service to society could be undertaken in conjunction with the university's existing academic activities and resources. The university managers emphasised that academic programmes provided in their university were intended to serve public needs and to promote support for economic and social development in which society at regional level was included in this response. They also claimed that research and development centres in the university, faculties, and academic departments were able to serve the needs of society.

However, service to society in all three universities was recognized to form a relatively small proportion of the overall academic performance of academic staff in the university. Discussions regarding this will be given hereafter in this paper.

Academic staff

Academic staff perceived service to society as a voluntary action. Although service to society was included in the functions of academic staff in accordance with the four main tasks of the university, academic staff claimed that they rarely noticed serious encouragement from the university. Academic staff explained that the university gave them freedom to design how to diversify their academic work as long as it was intended to fulfil the general policy of the university. As far as this freedom was concerned, academic staff could decide whether they wished to take service to society into account. However, regarding the system for promotion into academic positions, most academic staff admitted that they might give up performing service to society if the activity

required them to sacrifice their time for undertaking teaching or research which was weighted as a higher priority.

According to an Associate Professor in University C:

> We can include service to society undertaken in our workload. However, in terms of the promotion to academic positions, service function itself does not have much influence on the assessment of academic staff unless we can transform the work undertaken into a publication.

Academic staff in all three universities stressed that they fully intended to perform this service function, but that it was often pulled back by time constraints. One of the reasons was they commented that routine duties such as teaching workloads consumed the large amount of their time. Student: staff ratios in all three universities are presented as follows:

Table 1. Summary of student and staff numbers in academic year 2004-5 at three universities in Thailand

University A

Groups of Academic Disciplines	Total Students	Total Academic staff	Student: Staff
Social Sciences and Humanities	20,811	659	31.60 : 1
Science and Technology	8,410	345	24.40 : 1
Health Sciences	1,724	332	5.20 : 1
Total	30,945	1,335	23.18 : 1

University B

Groups of Academic Disciplines	Total Students	Total Academic staff	Student: Staff
Social Sciences and Humanities	15,820	503	31:45 : 1
Science and Technology	12,056	711	16.95 : 1
Health Sciences	3,492	498	7.01 : 1
Total	31,368	1,712	18.32 :1

University C

Groups of Academic Disciplines	Total Students	Total Academic staff	Student: Staff
Social Sciences and Humanities	10,667	512	20.28 : 1
Science and Technology	9,029	358	25.22 : 1
Health Sciences	5,810	1,620	3.59 : 1
Total	25,506	2,490	10.24 : 1

Source: The authors

The group of Social Sciences and Humanities and the group of Science and Technology formed the majority of the student and staff numbers in all three universities. It can be seen from the Table 1 that student: staff ratios were very in these two groups. For that

reason, routine duties for academic staff such as preparing teaching materials, giving lectures, evaluating students' exercises and exams, and grading the students were time-consuming processes. For many academic programmes, teaching had become the priority workload which lessened time available to perform other forms of academic function.

In contrast to the other two groups of the university, the group of Health Sciences in all three universities had a relatively low student: staff ratios. All three universities operated their institutional hospitals and health service centres. These medical and health service centres worked effectively in harmony with teaching and research in the university that academic staff and students in Health Science disciplines learned and gained experiences in these institutional hospitals and health centres. Furthermore, all of which provided vital services to people in the region.

Apart from health services, there were a number of forms in which academic staff could participate; these forms included training courses, academic exhibitions, education fairs, business incubation centres, research undertaken in cooperation with the industrial sector for commercial purposes, and centres for academic excellence. However, these forms of activity were compatible with only certain academic disciplines where the relevance of the work was perceived by academic staff and managers complemented by the availability of the university resources and academic staff.

With regard to pressures of time and the allocation of resources to perform a variety of duties; most academic staff sometimes struggled to harmonize academic service with other functions and perceived service to society having less priority than teaching and research. Academic staff claimed that service to society was not applicable to all kinds of academic disciplines conducted in the university; some academic programmes were supportive to service activity while others were not. Some academic staff gave as the reason for not being involved in service to society that they had no idea how to combine teaching and research in their disciplines with service to society.

According to a Lecturer from the Department of English in University B:

Academic staff in my department are sometimes asked by the Faculty to conduct training courses in English language open for people from outside the University. From my own experience, I found that content and materials used in these courses require a lot of additional preparation as they are normally different from those used in lectures given to the University students.

A further problem perceived regarding service to society was there was no clear scale of performance evaluation for service to society performed. All academic staff were required to perform a variety of functions subject to performance evaluation systems as well as being required to adhere to the system for promotion into academic positions. Every action undertaken required a report in both descriptive and quantitative forms. In quantitative form, for instance, the scales of teaching function were hours per week and the number of students; the scales of research were the amount of research funding and the number of publications. The absence of similar measures was a difficulty for activities such as service to society and promotion of artistic and cultural affairs, especially when these activities were perceived as a voluntary action.

University B had attempted to address this problem. Quantitative measures that University B employed to present the performance of service to society in the University included:

- The number of people who gained benefits from the activity.
- The budget spent in the project.
- The level of satisfaction responded by people that service was delivered to.
- The revenue generated from the activity.
- The ratio between academic staff involved and the total academic staff in the University.

According to this arrangement, Faculties were expected to undertake service to society with regard to these evaluation instruments. Academic staff in each Faculty were subsequently informed. However, according to the 2005 Annual Report of University B, the ratio between academic staff involved in service to society activities and the total academic staff was 0.99:10. This figure meant that, in 2005, 0.99 in 10 academic staff were involved in service to society activities. This figure was considered a very low ratio compared to teaching where almost all of academic staff were involved. Considering this figure, the arrangement of evaluation instruments was not considered a practical influence on academic staff to perform academic service.

Comparing University C's 2005 Annual Report to University B's, the report on service to society was mainly presented in descriptive format where the University described the details of activities undertaken, Faculties involved and people who had gained benefits from the service; numerical figures were presented in a minor part of the report. The figures included:

- The number of people or organization who gained benefits from the activity.
- The total geographical area that agriculture services were delivered to.
- The budget spent in the project.

Unlike University B, the level of satisfaction reported by people who gained benefits from the service was not presented in the contents of the report. In addition, University C did not mention the amount of academic staff involved or the ratio to the total academic staff in the University. Considering the different forms of measurement from university to university, one question to be addressed was the extent to which academic staff were aware of how their performance in service to society would be measured.

From the views of academic staff, personal values rather than external influences were claimed to be an effective driver for academic staff to perform service to society. Academic staff in all three universities pointed out that, even though there was not a visible encouragement or physical incentive, they sometimes undertook service to society just because they were happy to do so as it was compatible with their personal values.

According to an Associate Professor from University B:

I undertake service to society because I recognize this function as the value of academic staff like me. I do not see this function significant in terms of either the workload or performance evaluation. In this semester, even though my workload

has recently by far exceeded the University requirement as I have undertaken three teaching courses and published my work in a couple of journals, I am still going to conduct two workshop trainings for two regional agricultural companies.

In addition to personal values, collegial relationships were also considered to be a significant motivation.

According to the Vice President of University A:

Academic staff intend not to be told to do anything by anyone. They administer themselves. Even the university managers or deans of the faculty can hardly force academic staff. The university leaders at both university and faculty levels need to be very persuasive and influential. Asking for cooperation, rather than making order, is the basic strategy that leaders use when they require any actions from academic staff.

Leaders at faculty and departments had a closer collegial relationship with academic staff than leaders at university level. The university policies were normally communicated through these sub-level leaders. Considering service to society, academic staff asserted that organizational tradition and influence from the leader of the Faculty or Department could make them aware of their involvement in service to society and the task they should undertake; this would be more effective than direction from the senior managers.

Significance of region

In general, all three universities perceived their region as the area where the university was located. However, in detail, each university identified the scope of the region in its own way. The significance of the region and the services delivered to regional society were also defined differently in these universities.

University A was located in Bangkok, the capital city of Thailand. Based on economic divisions, Thailand is divided into six regions: the North, the Northeast, the East, the Central, the South, and Bangkok itself. Bangkok was known as Thailand's centre of commerce, politics and culture. University A was one of the first five universities founded in Thailand in response to the need of Thai society in the past. For University A, service to society was of high importance, but this was to be delivered to the whole country and beyond, not just to the region. The University believed that the key players in serving society of all the level of a particular region were the local higher education institutions, such as former Rajabhat institutions, rather than leading national universities.

University A undertook variety forms of academic service and aimed to deliver the service to state agencies, the state enterprises, private enterprises, and individuals. The services operated included matching research enquiries with relevant Faculties or researchers, providing training, giving consultancy, promoting the life-long learning, and offering for hire venues and relevant equipment required for conference and seminar organizations. University A emphasised that services provided by the University covered a variety of needs from various sources in which regional society was included.

University B was a leading university located in the South of Thailand. The scope of region was defined by identical economic and geographical boundaries. Similar to University A, University B claimed to be one of the leading national universities. However, in contrast to University A, serving the South of Thailand was seen to be a central focus of the University, reflecting the unique tradition, culture, and geological resources in the region.

According to the Vice President of University B:

> The fact that we are located in Southern region is a dominant factor of how the University is operated. We are national university, a leading one. The fact that we are here is considered a very good source of knowledge generation. We undertake considerable variety areas of research due to the uniqueness of the area complemented by natural resources the region has got. We are here, produce knowledge then deliver it back to the region.

University B consisted of five campuses located in different provinces throughout the region. There were 23 centres for service to society operated by the university. These centres were divided into 2 groups: 1) the group of centres under the University administration, and 2) the group of centres under the administration of Faculties. There were also two sub-groups within each of these two groups: one was the Health Science services and a second one was for other services.

Considering academic programmes provided in the University campuses, the University intended to serve different purposes reflecting the needs of Southern Thailand. For instance, the Department of Marine Commerce provided academic programmes on seaboard commerce due to the character of the seaside region of Southern Thailand. There was also the provision of academic programmes in the College of Islamic Study reflecting the religion of the majority of residents in this region. In addition, there was the Faculty of Service Industry in one of the university campuses located in a famous tourist city of Thailand reflecting the fact that tourism was very important to the economy and employment in the area. In this way, it can be seen how academic structure, university Faculties and Departments, can reflect regional needs and practices.

University C was the first university founded in the North region. Although the University was located in the North, the idea of region from the university's view extended beyond the country's border; it extended to the nearby area in neighbouring countries including Laos, Vietnam, and part of Southern China. This area was known as the Mae Kong River region. This region was considered one of the significant economic communities in South East Asia. University C was determined to serve the economic and social development in this economic community rather than to limit the service within the North of Thailand.

There were 20 centres for service to society in University C. Regarding the management structure, these centres were directly administered by the University and the operation in each centre was undertaken by Faculty with relevant disciplines to the objective of the centre. For instance, the Financial and Investment Centre aimed to serve local industries including agricultural companies, tourist companies, local investors and SMEs. The Faculty of Agriculture, Faculty of Business Administration, and Faculty of Economics

were the three parties taking part in operating this centre under the administration of the University.

CONCLUSION

This paper has looked at how three public universities in Thailand undertake service to society at regional level. The paper has highlighted two tensions. The first relates to the definition of 'region' accepted and applied by each university. The second relates to the competing demands on academic staff. By resolving these two tensions, it is possible to influence the delivery of academic services at regional level.

During the past decade, service to society has been identified to be one of the four main tasks for Thai public universities in addition to teaching, research, and promotion of artistic and cultural affairs. This paper is interested in service to society at regional level because region is the direct environment of the university; it is where the university is located; the university is surrounded by the regional economy and society. This paper has presented a number of ways that public universities identify the scope of region, the significance of the region to the university, and the services delivered to the regional society.

These different interpretations of 'region' may be summarised as follows:

University A: The 'region' is the whole country; with no recognition of the region as a more confined physical external entity.
University B: The 'region' is defined by clear geographical and cultural factors.
University C: The 'region' is defined by physical geography which extends beyond natural boundaries.

Among the four main tasks of public universities, research is the main focus of activity since all these public universities intend to move to be more research-oriented institutions. Academic staff are expected to undertake service to society in harmony with other functions particularly with teaching and research. This paper has presented factors that promote the service function at regional level in public universities including; the character of the region, significance of the region perceived by the university, personal values of the staff, and the academic structure of the university.

This paper has also discussed factors that could pull academic staff and public universities back from performing service to society including: the perceptions of academic staff towards service to society as a voluntary action, a large teaching workload of academic staff, and the lack of certain scales in evaluating the performance of service function. These tensions are modelled in Figure A as following:

Figure A. The model summarizing the tensions of performing academic service in three public universities in Thailand

Pressures favouring academic service   Pressures against academic service

| Environment |
| - Expectations of government |
| - Expectation of society |

| Environment |
| - Relative important of research for status |
| - Competition between institutions |

| Believes and values |
| - University mission |
| - Personal values and commitment |
| Peer pressure |

| Beliefs and values |
| - Low esteem for academic service |
| - Academic service seen as voluntary |

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              ┌──────────┐
              │ Academic │
              │  Staff   │
              └──────────┘
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| Management |
| - Staff appointments |
| - Rewards and promotion |

| Management |
| - No clear corporate targets |
| - No clear performance indications |

| Practical issues |
| - Relevance to discipline |

| Practical issues |
| - No clear disciplinary relevance |
| - Student : staff ratios |
| - Poor internal communication |

| Academic Service |

Source: The authors

In Thailand, commitment to public service is given high priority by Government and by society. However, the response of universities is dictated by different perceptions and pressures. It is clear, therefore, that universities must develop new mechanism to encourage service activity.

Direct encouragement from the university, in addition to personal values of academic staff, could motivate academic staff to undertake more service to society. In order to make a visible encouragement, the scales of measuring the performance of service to society should be identified. Service to society is to be promoted for its benefits and effect on society, rather than grudgingly considered a compulsory feature in the performance evaluation and in the system for promotion into academic positions of academic staff.

The discussions and issues regarding service to society presented in this paper can be related to the creation of linkages created between the university managers and academic staff. On the one hand, it is vital that university managers understand the situation of academic staff in performing functions in reality; in particular, an appreciation of staff workings is essential. On the other hand, academic staff need to learn and accept the direction and communication from the university as the guideline of how to undertake service to society as well as to reflect their perceptions back in order to the university

managers in order to let them know the situation in reality. Effective internal communication are essential in the delivery of service to society.

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THE DEVELOPMENT OF A SERVICE LEARNING SYSTEM TO ENHANCE CIVIC RESPONSIBILITY OF UNDERGRADUATE STUDENTS IN BUSINESS ADMINISTRATION PROGRAMS

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ABSTRACT

The purposes of this study were (1) to analyze corporate social responsibility for BBA students; (2) to analyze service learning in higher education; and (3) to develop service learning system to enhance civic responsibility of BBA students.

Service learning is a teaching and learning strategy that integrates meaningful community service with classroom learning, which focuses on critical, reflective thinking and civic responsibility. Students use their newly acquired classroom academic skills to help solve a real-life problem or meet a need in the community. Through hands-on experiences, students apply what they learn in the classroom to the real world.

Data collection for this study involved surveying one-hundred businesspeople and BBA instructors of fifty-four universities for corporate social responsibility; and interviewing advisors of six universities for service learning courses. Data analysis was based on qualitative-quantitative approach in order to develop a service learning system. A one-group pre-post test experimental design was used. Twenty BBA students participated in a course which was implemented a service learning system as a pilot study.

The findings indicated that students, who participated in the service learning process and underwent the entire process of preparation, action, reflection, evaluation, and celebration, improved their civic responsibility, academic skills, professional skills and life skills.

INTRODUCTION

The terms 'business' and 'development' are interlinked as a mutually supporting process especially in the area of creating prosperity in a society. A sustainable business practice can contribute substantially to achieving economic development of a society. Ultimately, this economic development paves the way for sustainable prosperity of the country in which the business is flourishing. All business entities irrespective of their size or concentration should utilize all practical means to implement and actively pursue appropriate institutional civic responsibility programs. (Cherian, 2006)

Corporate social responsibility (CSR) is an evolution in the approach towards sustainable development. (International Institute for Sustainable Development, 2007) Sustainable business for organizations means not only providing products and services that satisfy the customer, and doing so without jeopardizing the environment, but also operating in a socially responsible manner. ISO 26000, currently targeted for publication in late 2008, is the designation of the future International Standard giving guidance, not requirements, on Social Responsibility. (ISO, 2006)

Education is the process of developing knowledge, values, attitudes, and skills through methods of teaching and learning. Service learning is a special form of experiential education that interwines community service with the classroom instruction. (Bowen, 2005) Service learning offers the greatest potential for fostering civic responsibility because it provides opportunities for students to engage directly in their communities and meet community needs while enhancing their course work. (Gottlieb and Robinson, 2002) Believing strongly in theories of 'learning by doing' espoused by John Dewey and others and that 'service to one's community is an essential part of one's ethical and moral education', service learning is a particularly appropriate pedagogy for courses that have performance skills or social awareness components which are best developed through participation. (Bhaerman, Cordell, and Gemez, 1998)

The Business Administration program is designated to provide the fundamental concepts and theory of business practice and specialized study in a business discipline, develop an awareness and understanding of the global context in which business operates, and prepare students to become responsible and contributing members of the community. Therefore, this study was conducted with the purposes of (1) analyzing corporate social responsibility for BBA students; (2) analyzing service learning in higher education; and (3) developing a service learning system to enhance civic responsibility of BBA students.

THEORETICAL FRAMEWORK

Service Learning

Service-learning is a form of experiential education where learning occurs through a cycle of action and reflection. Students work with others through a process of applying what they are learning to community problems and, at the same time, reflecting upon their experience as they seek to achieve real objectives for the community and deeper understanding and skills for themselves. (Eyler and Giles, 1999) Service learning fosters civic engagement and social responsibility while enriching and enhancing student learning within the active context of students' lives. As part of a transformative process, service learning meets civic and academic goals when structured reflection is an integral element of the process.

Six elements differentiate and characterize service learning. Three of these elements focus on the community: (1) the service is meaningful to the community; (2) the service meets a need or goal; and (3) the community defines the need or goal. The other three elements focus on the campus (1) the service flows from and into course objectives; (2) assignments requiring reflection integrate the service with course objectives; and (3) the assignment is assessed and evaluated. (Weigert, 1998)

Necessary Criteria for Academic Service Learning are: (1) Relevant and meaningful service for the community. Service provided in the community must be both relevant and meaningful to all stakeholders. There is purposeful collaboration between the University and the community and the community plays an active role in defining what the student's service activities will be. (2) Enhanced academic learning. The addition of relevant and meaningful service for the community must not only serve the community but also enhance student academic learning in the course. The service and academic goals must inform and transform one another. (3) Purposeful civic learning. The addition of relevant

and meaningful service in and to the community not only serves the community and enhances student academic learning in the course, but also prepares students for active civic participation in a diverse democratic society. (Howard, 1993)

Civic Responsibility

Civic Responsibility means active participation in the public life of a community in an informed, committed, and constructive manner, with a focus on the common good. (Gottlieb and Robinson, 2002) Concepts of civic responsibility include 'citizenship for democracy', 'participatory democracy', and 'social responsibility'. Essential competencies and skills that help promote civic responsibility include intellectual skills, participatory skills, research, and persuasion. (Constitutional Rights Foundation, 2000)

Many educators believe that civic responsibility can best be developed when teachers work toward linking three components: community service, learning outcomes, and civic education. Quality service-learning exists only when all three come together. (Constitutional Rights Foundation, 2000) Using service-learning to develop civic responsibility allows community colleges to fulfill their basic mission of providing a quality educational experience and serving the needs of the community. This effective practice offers strategies that educators can use to integrate civic responsibility concepts and activities into their courses so that students come away with a greater understanding of what is expected of them as citizens in our society. (Gottlieb and Robinson, 2002)

Corporate Social Responsibility

Corporate social responsibility is the commitment of business to contribute to sustainable economic development, working with employees, their families, the local community and society at large to improve their quality of life. A coherent CSR strategy, based on integrity, sound values, and a long-term approach offers clear business benefits to companies and contributes to the well-being of society. (World Business Council for Sustainable Development, 2002)

As there is no single, commonly accepted definition of CSR, there is also no commonly accepted classification of the main components of CSR. Often, CSR is related to: (World Bank, 2005)

1. Environmental protection. The focus is on finding sustainable solutions for natural resources use to reduce company's impact on the environment.

2. Labor Security. It includes freedom of association and the effective recognition of the right to collective bargaining; the elimination of all forms of forced and compulsory labor; the effective abolition of child labor; and the elimination of discrimination in respect of employment and occupation.

3. Human rights. The main focus is on developing workplaces free from discrimination where creativity and learning can flourish decent codes of professional conduct, and where a proper balance can be maintained between work and other aspects of our lives.

4. Community involvement. It includes community partnership, employee giving, global community involvement, philanthropy, product and services donations, release time, volunteerism, etc.

5. Business standards. The standards cover a broad area of corporate activities such as ethics, financial returns, environmental protection, human rights and labor standards.

6. Marketplace. It includes distribution, ethical marketing, pricing, billing, consumer's privacy, product disclosure, product quality and safety, etc.

7. Enterprise and economic development. This broad concept includes competitiveness, development of local SMEs, entrepreneurship, community economic development, micro finance in emerging economies, etc.

8. Health promotion. The workplace is now recognized as an important setting for health promotion in industrialized countries, and interest is growing in the wider role that business can play as a partner in health development.

9. Education and Leadership Development. Companies can make more critical impact on the development process by raising standards in corporate education and leadership development, and bringing best practices to their partners in developing and transitional economies.

10. Human Disaster Relief. Companies, in cooperation with public sector, civil society, and international organizations, have played an important role in supporting humanitarian relief operations.

Character Education

Character education is defined as the planned and unplanned efforts of society to nurture the moral development of its members. (Bradley, 2001) It holds that there are widely shared, pivotally important core ethical values -- such as trustworthiness, citizenship, caring, honesty, responsibility, fairness and respect for others and self that form the basis of good character. (Ida and Rose, 2003) To develop students socially, character education infuses ethics and academics into every aspect of the school culture and curriculum. (Haynes and Thomas, 2001) Service-learning has been found to be an excellent motivator of character development and one of the most effective methods for teaching and learning the lessons of character. It provides young people with the opportunity to act on and affirm the values they learn in school. As with any other academic subject, putting the ideas into practice makes students come alive. (Holman, 2001)

METHODOLOGY

The study was an experimental research which aimed to analyze concepts of service learning, civic responsibility, corporate social responsibility and character education in order to develop a service learning system. Data was collected from businesspeople of TOP 100 Companies listed in the Corporate Governance Report of Thai Listed

Companies 2005 and BBA instructors of fifty-four private and public Thai universities, via a questionnaire for corporate social responsibility. Service learning advisors from six Thai universities were also interviewed about service learning courses. Data analysis was based on qualitative-quantitative approach.

As a result of the analysis, a service learning system was developed. One of the Insurance Department's major courses, Insurance Marketing, was selected to implement the service learning system as a pilot study. The study was conducted through a one-group pre-post test experimental design. Twenty BBA students, majoring in Life Assurance and Property & Casualty Insurance from the Faculty of Business Administration, Assumption University, participated in the pilot course for 45 hours.

FINDINGS OF THE STUDY

Expectation and Performance on Corporate Social Responsibility

A total of 90 out of 100 businesspeople of TOP 100 Companies listed in the Corporate Governance Report of Thai Listed Companies 2005 and a total of 47 out of 54 BBA instructors of private and public universities responded to the questionnaires. The response rate was 90.00% and 87.00% respectively. The respondents were asked about expectation and performance of corporate social responsibility (CSR) in business companies.

The survey showed that businesspeople had significantly higher expectation rates than performance rate for all components of corporate social responsibility. (see Table 1) This indicated that businesspeople should improve their performance on corporate social responsibility. Common reasons for lower performance rate were less knowledge, less authority and fewer budgets to achieve some components of CSR; no time to join CSR program; and less interest to do so.

Table 1: Businesspeople's Expectation and Performance on Corporate Social Responsibility

Components of Corporate Social Responsibility (CSR)	Expectation (E)		Performance (P)		Difference (P-E)	t
	$\overline{x}$	S.D.	$\overline{x}$	S.D.		
.1 Environmental Protection	4.47	0.42	3.59	0.74	0.88-	*10.511
.2 Labor Security	4.01	0.52	3.78	0.61	0.23-	*4.158
.3 Human Rights	3.94	0.65	3.57	0.54	0.37-	*5.268
.4 Community Involvement	4.18	0.59	3.47	0.82	0.71-	*8.681
.5 Business Standards	4.48	0.43	4.03	0.63	0.45-	*7.703
.6 Marketplace	4.64	0.43	4.16	0.70	0.48-	*7.137
.7 Enterprise and Economic	4.30	0.38	3.68	0.66	0.62-	*8.947

Development						
.8 Health Promotion	4.54	0.55	3.95	0.88	0.59-	*6.913
.9 Education and Leadership Development	4.42	0.44	3.70	0.68	0.72-	*10.249
.10 Human Disaster Relief	4.13	0.67	3.36	0.92	0.77-	*8.462
Total	4.13	0.31	3.37	0.53	0.58-	*11.369

* $p < 0.05$

BBA instructors also had higher expectation rate than performance rate for all components of corporate social responsibility. Five components, namely environmental protection, human rights, community involvement, health promotion, and education and leadership development, diverged significantly (see Table 2). This indicated that BBA instructors should teach or cultivate more corporate social responsibility to students. However, reasons which caused them lower performance rate were the difficulty in teaching CSR in some courses because of course content, and limitation of timeframe.

Table 2: BBA Instructors' Expectation and Performance on Corporate Social Responsibility

Components of Corporate Social Responsibility (CSR)	Expectation (E)		Performance (P)		Difference	
	$\overline{x}$	S.D.	$\overline{x}$	S.D.	(P-E)	t
.1 Environmental Protection	4.47	0.40	4.20	0.64	0.27-	*3.756
.2 Labor Security	3.92	0.50	3.88	0.70	0.04-	0.452
.3 Human Rights	4.24	0.57	3.83	0.86	0.41-	*3.839
.4 Community Involvement	4.46	0.47	4.15	0.74	0.31-	*4.027
.5 Business Standards	4.58	0.41	4.55	0.40	0.03-	1.833
.6 Marketplace	4.69	1.23	4.32	0.82	0.37-	1.941
.7 Enterprise and Economic Development	4.27	0.45	4.09	0.71	0.18-	2.002
.8 Health Promotion	4.67	0.46	4.34	0.84	0.33-	*2.959
.9 Education and Leadership Development	4.51	0.41	4.19	0.72	0.32-	*3.425
.10 Human Disaster Relief	4.07	0.62	3.87	0.88	0.20-	1.682
Total	4.39	0.30	4.14	0.56	0.25-	*3.839

* $p < 0.05$

Service Learning in Higher Education

Service learning advisors from six Thai universities were interviewed about service learning in higher education. The results found that few Thai universities integrated service learning into courses and used it as a teaching and learning method. Most universities arranged service learning activities, supervised by Students Affairs, to cultivate students morally and ethically. Some universities required students to service the community, as a part of Business Ethics courses with or without credits, before they graduated.

All advisors believed that service learning could foster students to have civic responsibility and to be good citizens. Through service learning projects, students had opportunities to participate in the community to help or serve the needs of other people. The activities brought them to understand and respect each other, and to exercise the rights and responsibilities of a democratic society. They could practice academic skills, professional skills and life skills; and also apply civic values to real problems in their class, university, community and beyond.

To arrange service learning, three components should be taken into account: (1) the university policy should support service learning through curriculum, budgets, etc.; (2) a center for service learning should be established to act as the responsible unit for all activities concerned with service learning; and (3) the university should support service learning by setting service learning as a requirement for graduating students.

To get started on service learning activities, a teacher provides students with information on service projects, such as objectives, types, places, budgets, and timeline. Students are grouped together, ranging from 5 to 60 members, depending on type of services. A survey on the communities must be done to design service projects which meet their needs or problems. A teacher performs the role of a facilitator or guide. Reflection is recommended to see what students' learning had occurred during the service. It helps for a teacher to examine and form students' beliefs, values, opinions, assumptions, judgments and practices related to an action or experience.

Through hands-on experiences, students could learn how to apply knowledge to a real-life, real-world context. As a result, service learning offers powerful opportunities to acquire the habits of critical thinking; i.e. the ability to identify the most important questions or issues within a real situation. Examples of service projects are to assist with the costume design, to provide e-commerce knowledge, to prepare marketing plan for a local product, to arrange eco-tourism, to teach kids English, to write papers of environmental projects and to develop a website for nonprofit organization.

Development of a Service Learning System

The service learning system was developed from concepts of service learning, civic responsibility, corporate social responsibility and character education for undergraduate students in Business Administration programs in order to enhance civic responsibility. The system consisted of inputs, process, outputs and feedback. (see Figure 1)

Figure 1: A Service Learning System to Enhance Civic Responsibility of Undergraduate Students in Business Administration Programs

Service Learning Process

Preparation

Teacher
1. to study the curriculum.
2. to select a course
3. to analyze objectives.
4. to do a study plan
5. to cooperate with the service learning center.
6. to support a service

Students
1. to survey the community.
2. to analyze the community's problems or needs.
3. to determine a service project.
4. to be familiar with the community
5. to review a lesson

University
1. to manage the university's circumstance for service learning.
2. to build up the relationship between the university and the community.
3. to support the budget for a service

Community
1. to understand a service learning project.
2. to cooperate a service learning project.

Action

Teacher
1. to advise during service activities.
2. to observe an interaction between students and the community during service

Students
1. to do service activities.
2. to report problems arising from service activities
3. to report service learning results to the teacher.

Community
1. to cooperate in service activities.
2. to inform problems arising from service activities to the teacher.

Reflection

Teacher
1. to connect the relationship between service experiences and academic contents.
2. to advice for service learning experiences.
3. to encourage civic responsibility

Students
1. to present service learning experiences in the classroom.
2. to share ideas for connecting service learning experiences and course contents.

Evaluation

Teacher
- to evaluate students before, during and after service learning projects

Students
- to evaluate friends and himself/herself during and after service learning projects.

Community
- to evaluate students after service learning projects.

Celebration

Teacher
1. to arrange the service learning presentation.
2. to comment on service learning projects.
3. to publish service

Students
1. to present service learning projects.
2. to comment on service learning projects.
3. to publish service learning

Community
1. to participate in service learning presentation.
2. to comment on service learning projects.
3. to publish service

PROCESS

OUTPUTS

Benefits of Service Learning

Teacher	**Students**	**University**	**Community**
1. to develop the teaching strategy. 2. to integrate curriculum with community service. 3. to identify area for research and publication related to current trends and issues.	1. to think critically 2. to deepen understanding of course contents. 3. to increase professional skills. 4. to increase life skills. 5. to increase civic responsibility and good citizenship.	1. to increase the university's responsiveness to society's needs. 2. to enhance public image of the university. 3. to develop the relationship among teacher, students, university and community.	1. to extend the community's ability to address unmet needs. 2. to improve the relationship with the university. 3. to increase the chance for contributing to the educational process.

FEEDBACK

All inputs, including concepts, theories, objectives, and all stakeholders (i.e. teacher, students, university and community), were brought into the system in order to run a service learning process. The process was composed of five steps. (1) Preparation. It was to define learning objectives for the course and design the instruction for the service learning projects. (2) Action. Meaningful action was crucial to successful service learning experience. Service activities should be related to course content and community needs. (3) Reflection. It established connections between students' service experience and all course contents; and created their own notions of morality. Reflection could be done by discussions, portfolios, analytical papers, journal writings, etc. (4) Evaluation. It was based on what students learned from service experience and was done by teacher, students and community throughout the projects. (5) Celebration. It was to acknowledge that the projects were accomplished. All stakeholders celebrated and shared the service experience through meeting or publication. After the entire process was completed, all stakeholders gained a lot of benefits as service learning outputs. Finally, all results were taken into account as a feedback to determine whether the service learning system was achieved and, consequently, to identify what should be amended to improve overall system performance.

Experimental Results of Service Learning

As a pilot study, a service learning system was integrated into Insurance Marketing, a major course of Life Assurance and Property & Casualty Insurance. Twenty students participated in such course for 45 hours. Four groups, 4 to 6 members each, did different service learning projects in the same community. The service learning process, included preparation, action, reflection, evaluation, and celebration, was accomplished.

1. Preparation. Students surveyed the community and identified its risks in order to plan service learning projects which met the community needs or problems. Findings indicated that most community members had the risks of poor health and motorcycle accidents.

Students reviewed the course contents of risk management and insurance in order to provide service activities effectively.

2. Action. Students provided service projects by using risk management techniques, i.e. risk control and insurance, to handle risks of the community. One group taught kids about sanitary and accident prevention in the nursery school. The others provided insurance knowledge to community members through insurance broadcasting, insurance exhibition and insurance games.

3. Reflection. Each student reflected on what he/she learned from providing services and what he/she thought of civic responsibility. The teacher helped students to connect the relationship between service experiences and course contents. Reflection methods used were discussions and analytical paper writings. This step helped students to deepen their understanding of course contents and to form their beliefs, values and opinions.

4. Evaluation. Teacher evaluated on students' learning from service, not quality or quantity of service. A set of evaluation instruments, consisting of activity records, analytical papers, portfolio, discussion and presentation, were used. Students also evaluated the performance of other students during the service activities. Finally, the community members evaluated the service projects after the project's completion.

5. Celebration. The service learning projects were presented to all stakeholders in the last class. At this stage, it was important to say thank you to all involved. The meeting also helped to reaffirm partnership and renew the commitment to provide service. As a part of the presentation, students arranged their work for service learning on an exhibition board. The projects were also published in the University's newsletter.

The students who participated in the service learning system improved their civic responsibility, academic skills, professional skills and life skills. It was found that students had significantly higher post-test scores of learning outcomes than pre-test. (see Table 3)

Table 3: Comparative Analysis of Pretest-Posttest for
Students' Learning Outcomes of the Service Learning System

	Pre-test		Post-test		
Learning Outcomes	$\overline{x}$	S.D.	$\overline{x}$	S.D.	**t-value**
1. Civic Responsibility	2.70	0.68	3.87	0.45	-5.924*
2. Academic Skills	3.58	0.61	4.20	0.52	-3.481*
3. Professional Skills	3.55	0.68	4.16	0.43	-3.052*
4. Life Skills	4.19	0.46	4.39	0.43	-1.449

* p < .05

CONCLUSION & RECOMMENDATIONS

Service learning provides an opportunity for instructors to develop a teaching method that is an alternative to traditional lecture, connecting the community with the curriculum.

Through hands-on experiences, students have an opportunity to learn by using newly acquired academic skills and knowledge in a real life situation. Service learning extends learning beyond the classroom, which allows students to see the real world. Students learn to perform teamwork, solve real problems, think critically and foster a sense of caring for others. As a consequence of service experience, students gain self respect, empathy and civic responsibility. Therefore, service learning supports social, emotional and cognitive learning and development.

To successfully integrate service learning in teaching and learning, the following steps should be applied: (1) Preparation. Preparation of all participants for service learning experiences offers positive outcomes for both students and the community. (2) Action. Service learning activities bring valuable knowledge to the community and students' learning. (3) Reflection. Reflective exercises form connections between service experiences and course content, and help students to create their own notions of morality. (4) Evaluation. All evaluation should be based on what students learn from service experiences. (5) Celebration. This is a final activity to say thank you, affirm connections, honor the efforts, and renew commitment to provide service to all stakeholders. Service learning provides numerous benefits. Students can improve critical thinking skills, deepen their understanding of course contents, and broaden their perspectives by connecting them with the larger world. Faculties have an opportunity to develop a teaching method, rather than lecture. The university has more responsiveness to society's needs and enhances the public image of the university. Communities can improve their relationship with the university and contribute to education.

Service learning should be integrated as a requirement in academic courses. Students would be provided with the opportunity to learn from experiences and enhance their civic responsibility through direct participation with the community. The course integrating service learning should allow students to implement and apply theories into practices, and should not be courses that are pure theory. Students should at least have some basic knowledge to arrange service projects for communities; otherwise, communities may loose the advantage from the service provided. To get the best learning outcomes for students, teachers should prepare communities for students' services. This eliminates any confusion or approach communities. Students should review all course contents in order to effectively provide services to communities and, as a result, extend their knowledge from experience. The University should support service learning through curriculum and budgets. At the same time, a center for service learning, set up as a responsible unit for service activities, is also suggested. Communities should extend their cooperation in providing an opportunity for students to service activities. In return, communities would be able to fulfill their unmet needs. All service projects should address the community's problems or needs, while at the same time, enhance the student's academic knowledge. The type of service, places, timeframe, budgets, and community should all be taken into account. Through good preparation and support from all parties involved, service learning is an experience that provides rewards to students, teachers and community members for a lifetime.

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CURRICULUM DEVELOPMENT OF THE THAI ART WISDOM COURSES IN UNDERGRADUATE ART EDUCATION PROGRAMS USING INTEGRATED LEARNING RESOURCES

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ABSTRACT

The purposes of this research are to study Thai art wisdom courses of undergraduate art education curriculum of the public higher education institutes, to develop and implement curriculum, and to evaluate curriculum of Thai art wisdom courses which integrating learning resources. The research methodology are as followings: 1) studying Thai art wisdom courses of undergraduate art education curriculum of the four public higher education institutions; 2) interviewing the experts of Thai art, culture, and Thai wisdom; 3) holding the meeting among art teachers to brainstorming; 4) Developing Thai art wisdom courses using integrated learning resources; 5) implementing Thai art wisdom courses by integrating learning resources case study, which consisted of the objective of course, course content, management of instructional experience, evaluation the learning model usage; and, 6) evaluating curriculum.

The research sampling group is the second year students studying Thai art wisdom course in Art Education Program, Faculty of Education, Chulalongkorn University. The research instruments are 1) the survey questionnaire of self inquiry learning of students; 2) the learning achievement test of Thai art wisdom course; 3) the attitude test of learners concerning Thai art wisdom course using integrated learning resources; and, 4) the survey questionnaire of student opinion concerning the curriculum of Thai art wisdom.

The research findings will be proposing the curriculum model of Thai art wisdom courses with integrated learning models.

INTRODUCTION

Through the high degree of competition and the sudden change which is going on. That is true for Thailand like any other country in the world. The Thai way of life and the Thai culture have been seriously affected by the influx of western influences. That is the reason why the education reform movement requires promotion of Thai art, culture and wisdom (Office of National Education Commission, 2001). The Ninth Higher Education Development Plan (2002-2016) prescribes, as one of the greatest goals of higher education development, a more serious effort to promote art and culture through the learning of way of life so that professors, students and communities will be more appreciative of Thai art, culture and wisdom and know how to preserve them (Ministry of University Affairs, 2000).

Higher education institutions are the country's most privileged institutions. They produce leading-class people and are the centers of various sciences. As such, they are a key mechanism steering people in the desired directions and preserving the unique Thai arts

and culture (Wijit Sri-sa-arnn, 1974). Higher education institutions should therefore help instill a proper artistic value by arranging sufficient numbers of Thai art, culture and wisdom courses that reflect current requirements. However, these courses generally lack diversity and are not very flexible. They focus more on technical content than critical thinking or creative thinking. Consequently, learners are not inspired to learn more and to synthesize new core knowledge. Art, culture and wisdom courses are few and far between (Religion, Art and culture Commission of the Thai Parliament, 1993). This is the reason why I have decided to conduct research on the development of Thai art wisdom courses using integrated learning resources. These are required and elective courses for the Departments of Art, Music and Dance Education and the Faculty of Education at Chulalongkorn University. They are intended to help instill in students a positive attitude towards Thai arts and culture, and, focus on encouraging them to analyze, synthesize and give them the skills with which to begin their own search for knowledge. Learning through integration of multiple skills and core knowledge keeps learners inspired and engaged in lifelong education. In addition, the findings of this research will continue to benefit art and other educations in their development of Thai wisdom and culture related courses.

Objectives

1. To examine Thai art wisdom courses offered by public higher education institutions
2. To develop and put to trial Thai art wisdom courses using integrated learning resources
3. To evaluate Thai art wisdom courses using integrated learning resources

Scope of Research

I have conducted this research within the following boundaries:

1. Examination of Thai art wisdom courses offered by education and fine arts faculties with four public higher education institutions: Faculty of Education, Chulalongkorn University; Faculty of Fine Arts, Srinakarindrawirote University; Faculty of Education, Kon Kaen University; and, Faculty of Education, Prince of Songkhla University, through analysis of documents on Thai art wisdom courses and instructions as well as interviews with qualified individuals teaching these courses and Thai art wisdom.

2. Thai art wisdom courses refer to the curricula and instructions established for Thai art wisdom subjects. Those offered by the Department of Art, Music and Dance Education and Faculty of Education at Chulalongkorn University are comprised of principles and rationale, objectives, contents, instruction mode, evaluation, learning resources and curriculum details.

3. A trial was conducted one course: Thai Art Wisdom. This was a previously existing course with changes made to objectives, content, instructional activities and evaluation and learning resources. It was used with a sample group of sophomore students of the Department of Art, Music and Performance and Faculty of Education at Chulalongkorn University.

Conceptual Framework

Various legal stipulations including the Constitution of the Royal Kingdom of Thailand B.E. 2540, National Education Act B.E. 2542 and Religious, Artistic and Cultural Study Plan, require the promotion of Thai wisdom, art and culture and the instillation of patriotic pride. Higher education must be the most learner-oriented of all levels of education. It must allow learners to develop naturally and to their full potential through the use of learning processes which seek to improve all of their skills, making it possible for them to learn anytime, anywhere and using any learning resource.

Course specifications and desirable qualities of graduates were studied for the development of Thai art wisdom courses. Conceptually, the similar course development theories of Tyler (1949) and Taba (1962) were studied. These theories break course development into four stages: 1) establishment of course objectives; 2) selection and arrangement of contents; 3) learning experience management; and, 4) evaluation. Cognitive domain, affective domain and psychomotor domain are used to determine the aim of the course in accordance with Bloom's concepts (Bloom and Krathwohl, 1956). Learning experience management focuses primarily on the learners: allowing them participation in the learning process; ensuring that they know how to learn, gather and generate knowledge on their own; and, giving learners the possibilities of self-reliance, self-evaluation, problem solving skills, teamwork and personality development.

Thai wisdom has been a subject of interest following the artistic and cultural crises triggered by education which is heavily influenced by foreign wisdoms. More Thai wisdom courses are needed and the only effective way of learning Thai culture is through understanding and appreciation. Different integrated learning models can be used, for instance, the nested model, sequenced model, webbed model and immersed model of Fogarty and Stoehr (1995). Fox's resource-based learning concept engages learners in self-study using three components: 1) learner-oriented instruction; 2) thinking process which involves the abilities to gather, evaluate and generate knowledge; and, 3) information resources which involve diverse content and areas of education.

RESEARCH METHODOLOGY

1. Thai art wisdom courses survey

Study documents on curricula and instructions for Thai art wisdom courses or other relevant courses of four public higher education institutions. Conduct an in-depth study of course syllabuses or teaching plans for compulsory Thai wisdom courses as well as documents, books and research reports on Thai art and cultural wisdom courses, course development and integration of learning resources. Content analysis was used to review art course structure, objectives, contents, instruction arrangements, evaluation and use of learning resources. The findings of which provide fundamental information necessary for the interviews of qualified individuals.

2. Expert opinions on Thai art wisdom courses

Interviews with qualified individuals who were involved with the development or the improvement of art courses at all four institutions, and, with Thai art course instructors. The interview structure was moderately scheduled in nature. Information

obtained through the interviews was analyzed in order to identify the conceptual framework for the development of Thai art wisdom courses. Products of the analysis were given to qualified individuals in order to ensure content validity and to implement suggested improvements.

3. Brainstorming focus groups

Focus groups were held with selected participants who were Thai art wisdom course instructors from all four public higher education institutions and qualified individuals in the fields of art, culture and wisdoms. The focus groups aimed to provide a conceptual framework for the development of courses and to engage participants in a brainstorming. Ideas generated at the focus group were analyzed in order to establish a framework for the development of courses.

4. Development of Thai art wisdom courses using integrated learning resources

4.1 Findings from the examination of Thai art wisdom course documents and instructions, interviews with qualified individuals involved with art courses and focus groups were used to develop a Thai wisdom course framework comprising of objectives, number of courses, course types, number of required and elective courses, number of credits and course details which include principle and rationale, objectives, contents, instruction experience, evaluation, and, use of integrated learning resources.

4.2 The course was evaluated by experts and qualified individuals who ensured content validity and accuracy using Cronbach's coefficient alpha in order to improve the course prior to actual use.

4.3 Instruction materials were prepared including course syllabi, teaching plans, supporting documents and integrated learning resources.

5. Course trial

An improved course, Thai Art Wisdom, was used in a real-life scenario with a sample group of 22 art students of the Faculty of Education, Chulalongkorn University in the first semester of 2007. The students were specifically selected and the technique used was one-group pre-test post-test design. The course was carried out using course syllabuses, plans, supporting documents and integrated learning resources. Tests and questionnaires were used for the evaluation.

6. Evaluation

The course was evaluated by a connoisseurship which comprised of all Thai art, culture and wisdom courses from the four institutions, qualified individuals in the area of Thai art, culture and wisdom and in the area of instruction who brainstormed and provided opinions on the suitability and feasibility of the Thai art wisdom courses developed. In addition, they provided recommendations on how to improve the courses.

Research Instruments

The instruments used in this research are those which I have developed from analyses of relevant information for data collection, namely:

1. Interview

Interviews with qualified individuals who were involved with the development or the improvement of art courses at all four institutions, and, with specifically selected Thai

art courses instructors. The interviews were about educational management and higher education Thai wisdom course development with regard to course structure, objectives, contents, learning experience management, evaluation, learning resource usage, problems and obstacles. Analyses were conducted of documents and instructions Thai art wisdom and relevant courses; in-depth study of syllabuses or teaching plans of required Thai art wisdom courses; and, documents, literatures and researches on Thai art, culture and wisdom courses, course development and integration of leaning resources in order to form open-ended questions of moderately scheduled structure used in the interviews covering a number of key topics: 1) course structure; 2) objectives; 3) contents; 4) learning experience management; 5) learning resource usage; 6) evaluation; 7) problems and obstacles; and, 8) opinions and suggestions.

 2. Self-inquiry capability questionnaire

A questionnaire I have developed to measure the students' understanding of the self-inquiry learning process using integrated learning methods. It is based on an examination of Thai art wisdom courses' objectives, learning resources integration concepts, learning integration models of Robin Fogarty and Judy Stoehr (1995); characteristics of self-inquiry capable students (Wenden, 1998); and, researches on the development of tests. The questionnaire was developed using an integrated learning model. Used pre-test and post-test, this questionnaire was checked for content validity by three qualified individuals and was amended as per their recommendations. It presented questions on a number of topics: 1) determination of aims and learning planning; 2) knowledge search and access; 3) learning resource selection and evaluation; 4) knowledge linking; 5) knowledge generation; and, 6) process and outcome evaluation.

3. Thai art wisdom course learning achievement test

A test I developed to measure the students' knowledge and understanding of Thai art wisdom courses using integrated learning resources. It is based on examination of objectives, contents, instructional activities and evaluations prescribed for each learning unit. Used pre-test and post-test, this 4-choice test was checked for content validity by three qualified individuals and was amended as per their recommendations. The Thai art wisdom course learning achievement test was put to trial use with 15 art education students of Kon Kaen University who were not part of the sample group in order to determine accuracy using Cronbach's coefficient alpha.

4. Thai art wisdom course attitude questionnaire

A questionnaire developed to determine the attitude of learners towards awareness and appreciation of Thai art wisdom and their aspiration to learn using integrated learning resources. It is based on analyses of documents, literatures, concepts, theories and research on Thai art wisdom and the integrated learning models of Robin Fogarty and Judy Stoehr (1995). Featuring a 5-step rating scale of the Likert type, this questionnaire was checked for content validity by three qualified individuals and was amended as per their recommendations. The Thai art wisdom course attitude questionnaire was put to trial use using 15 art education students of Kon Kaen University who were not part of the sample group in order to determine accuracy using Cronbach's coefficient alpha.

5. Opinion questionnaire

A questionnaire I developed to obtain learners' opinions on Thai art wisdom courses using integrated learning resources with regard to objectives, contents, instruction management, evaluation, and, integrated learning model usage. It comprised of the following three sections:

Section 1: General status of the respondent

Section 2: Opinions on Thai art wisdom courses using integrated learning model with 5-step rating scale of Likert type

Section 3: Open-ended questions allowing respondents to make suggestions

Data analysis

1. Content analyses were conducted on literature, interviews with qualified individuals and focus groups in order to obtain basic information for the development of the course and to draft a framework for the course.

2. Data from self-inquiry capability questionnaires and pre-test/post-test Thai art wisdom course learning achievement tests were analyzed using a t-test.

3. Data from Thai art wisdom course attitude questionnaires and opinion questionnaires were analyzed quantitatively using SPSS for Windows to determine percentage, mean and standard deviation. Data obtained through open-ended questions were collectively summarized in order to identify issues.

Outcomes of all analyses were summarized as the achievement of Thai art wisdom courses.

Summary of Research Procedure

Stage 3: **Trial use**	1. Put the course to trial use with one sample group as a case study. Evaluation is performed using test, learning achievement test, attitude questionnaire and opinion questionnaire

	2. Analyze information and compare pre-test and post-test results	Mean($\bar{x}$) from pre-test evaluation

Stage 4: **Course** **efficiency** **evaluation**	1. A connoisseurship evaluates efficiency of Thai art wisdom course using integrated learning resources.

	Improve the course	Fully developed Thai art wisdom course

RESEARCH FINDINGS

According to the stages of the research procedure flowchart, the finding can be summarized as follows:

Literatures on Thai art wisdom courses of four public higher education institutions were reviewed for structure, objectives, contents, learning experience management, evaluation and use of learning resources. Content analyses were conducted of the findings in order to obtain fundamental information necessary for the interviews with qualified individuals in art education and Thai art wisdom course instructors at four public higher education institutions on the state of Thai art wisdom courses. It was learned that each institution offers one required course and one to eight elective courses in Thai art wisdom in their bachelor of education program or the new five-year bachelor of education program introduced in 2004. The required courses cover basic knowledge on Thai wisdoms and local wisdoms. Most elective courses focus on practical skills and local artistic work creations. The methods of instruction used in these courses are lecture, discussion and field study. All qualified individuals agree that the most effective method of instruction for Thai art wisdom courses is field study where learners engage in self-inquiry learning, obtain direct experiences and eventually become appreciative of Thai art wisdoms. With

regard to the improvement of Thai art wisdom courses, it is deemed appropriate to alter the numbers of required and elective courses and to adopt more integrated methods of instruction which allow learners to better understand and appreciate Thai wisdom, art and culture.

Focus groups were held to engage qualified individuals in art history, art curriculum development, Thai art wisdom and learning resources in brainstorming sessions. All experts agreed that higher education institutions should offer sufficient numbers of Thai art, culture and wisdom courses that reflect current requirements; that Thai art wisdom must cover basic knowledge on Thai wisdoms and local wisdoms; and, that the most effective method of instruction for Thai art wisdom courses is learning resources. Content analyses were conducted of the content to develop a course framework which was subsequently reviewed by qualified individuals to ensure content validity. I have made necessary changes to the framework as recommended by the qualified individuals. As a result, a Thai art wisdom course framework was developed, comprising of objectives, number of courses, course types, number of required and elective courses, number of credits and course details. An instruction set of syllabus, teaching plans, supporting materials and information on learning resources was made available.

Expected outcomes

One Thai art wisdom course has been put to trial use with 22 art sophomores, Faculty of Education, Chulalongkorn University in the first semester of 2007 from June. Self-inquiry capability questionnaire and Thai art wisdom course learning achievement pre-test were given and the instruction follows the teaching plans prepared. The process of experiment will finish by the end of September. The expected outcome of Thai art wisdom course using integrated learning resources is self-study capability, better academic achievement as well as proper attitude and appreciation of Thai art wisdom on the part of the learners.

The course will be evaluated by a connoisseurship which comprised of all Thai art, culture and wisdom courses from the four institutions, qualified individuals in the area of Thai art, culture and wisdom and in the area of instruction who brainstormed and opined on the suitability and feasibility of the Thai art wisdom courses developed. They will provide additional recommendations on how to improve the course as well. Content analyses will conduct of the findings to determine relevance and difference, and, to improve the course for perfection. The expected outcome is a Thai art wisdom course using integrated learning resources which a guideline for the improvement of other art courses and those related to Thai wisdom and culture.

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SUB-THEME:

IV. TEACHING AND LEARNING MECHANISMS

SELF-EVALUATION OF THAI UNIVERSITY ENGLISH TEACHERS IN THEIR TEACHING PRACTICE

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ABSTRACT

This research sits within the interpretive approach, taking into account a subjective meaning and its interpretation. The study investigates the self-evaluation of Thai English teachers in their context, regarding their teaching practice. In addition, it examines how the teachers evaluate themselves and what they have learned. The study finds that there are both advantages and disadvantages of teachers' self-evaluation. The investigation into the views of teachers regarding self-evaluation is also reported. From the subjective viewpoints according to the interpretive approach, it is found that teachers have diverse methods of self-evaluation, but slightly different recognitions of the importance of self-evaluation. Implications from the study have contributed to the professional development of the English teachers and the achievement of English language learners in the university and of others in similar contexts.

INTRODUCTION AND CONTEXTUAL BACKGROUND

According to Hayes et al., (2001), teacher evaluation is generally concerned with formal evaluation conducted by others, especially educators and inspectors, or with informal evaluation conducted by teachers themselves. A considerable amount of self-evaluation literature (e.g. Dickens and Germaine, 1992; Hayes et al., 2001; Gebhard and Oprandy, 1999) claim that self-evaluation is highly beneficial for teaching practices; that is, it is useful for raising teachers' awareness about their teaching and identifying problem areas. Moreover, it facilitates learning and development of self-knowledge, directs professional development and career planning, with a resulting increase in professional satisfaction.

In Thailand, all faculties at all universities are evaluated regularly and given marks for research and teaching quality. The research quality is measured by asking all university teachers to provide three best academic publications over the previous five years. The teaching quality is assessed by looking at a wide range of criteria including the aims and design of courses, student achievement, observation of teaching, and facilities for students. With universities becoming independent, there is likely to be more competition between universities. Most universities give much priority to teaching excellence than to research or community development in order to draw in a large number of students and other sources of income.

Formal evaluation for teaching practice is regularly conducted according to the assessment criteria of quality assurance. The evaluation is based on the views of senior inspectors, students' viewpoints, and learning achievement. The academic administrators rely on both the assessment results by senior inspectors, students' assessment of teaching,

and students' achievement. However, most Thai university teachers, myself included, do not enjoy being formally assessed. No one wants to receive negative feedback from inspectors and students. We would rather get positive comments for improving teaching and professional development. One way to evaluate teaching is by asking for feedback from students. Students' perceptions regarding lessons and teaching performance can help teachers to assess the quality of their teaching and to identify areas that need to be improved. Although some scholars claim that no one can provide better feedback on overall course quality than students (Alderson, 1992; Hayes et al., 2001; Tenbrink, 1974), in Thai culture it is commonly considered inappropriate for students to negatively assess their teachers. Therefore, the information obtained from the students might be unreliable.

Rationale and Theoretical Framework

Some evidence suggests that one of the methods for promoting effective practice in learning and teaching is self-evaluation (Wallace, 1998; Bullards, 1998; Stronge, 1997). By evaluating themselves, teachers are able to recognise what their strengths and weaknesses are and to compare these with the evaluation from students' viewpoints. This study, therefore, lies in the self-evaluation of the teachers' teaching practice and aims to raise the awareness of individual teachers' reflection and professional development. The research questions of this study are: (1) 'Do Thai English teachers evaluate their teaching practice? If so, what are their practices?' and (2) 'What are their perceptions of self-evaluation?'

The theoretical framework within which this research is undertaken derives from constructivist theory and critical reflection. According to Williams and Burden (2004), the implication of constructivist theory for language teacher education is important because it helps us to see the importance of teachers evaluating themselves and being aware of what their beliefs and views of the world are. Teaching, like learning, must be concerned with teachers making sense of, or meaning from the situations in which they find themselves. In an effort to improve teachers' self-awareness in this respect, some educational theorists emphasise the notion of 'critical reflection' (Boud et al, 1985; Schön, 1983). It implies that teachers should be aware of their belief systems and constantly monitoring how far their actions reflect those beliefs. It is self-conscious consideration that can lead teachers to a deepened understanding of themselves and others in relation to specific contexts. Also, it fosters a more profound awareness that can lead to change in thought and behaviour. To be effective teachers, Williams and Burden (2004) assert that they need to look both inwards and outwards, to construct a particular identity that they want to be, and to seek to reproduce this in their teaching and learning activities.

LITERATURE REVIEW

The definition of 'evaluation' and 'self-evaluation'

One well-known definition of evaluation is provided by Tyler (1950) who perceives evaluation as the process of determining to what extent the educational objectives are actually being realised. In a broader perspective, the process of evaluation forms a major part of curriculum design and provides valuable knowledge to inform teaching practice (Burden and Williams, 1996). Evaluation involves deciding what aspects in relation to teaching practice should be changed (Nunan and Lamb, 1996). Dickens and Germaine

(1998) similarly view evaluation as an intrinsic part of teaching and learning. It not only provides a wealth of information for the future direction of classroom practice but also makes a substantial contribution to the understanding and proper consideration of education change and development (Nisbet, 1987). Some scholars (e.g. Daresh and Playko, 1995; Wanzare, 2002) consider evaluation as a process of collecting and using information to determine the positive and negative aspects of teaching contexts and teaching competence.

There are two principal reasons for conducting an evaluation (Dickens and Germaine, 1998). The first is for assessment and accountability. This is a summative evaluation (Scriven, 1973) in which other people make decisions or judgements on the overall quality of teaching performance. Another reason is for curriculum development and teacher self-development. Scriven (1973) identifies this as a formative evaluation which is concerned mainly with raising teachers' awareness and bringing about ongoing improvement of classroom practice (Dickens and Germaine, 1998). The feedback obtained can help teachers identify and solve instructional problems in order to improve and to further their professional development (Holly, 1986). What Scriven (1973) calls, formative evaluation, is much like self-evaluation. It is not just a way of dealing with the demand for accountability, but an instrument which teachers could employ to improve their own performance (Elliott, 1987). Teacher evaluation, as a part of self-development, is a basic component of the professional life cycle of teachers (Nevo, 1994).

Why should teachers do 'self-evaluation'?

The significance of teachers' self-evaluation in their teaching career has been much recognised in teacher evaluation literature (e.g. Dickens and Germaine, 1998; Kemmis and McTaggart, 1982; Wanzare, 2002). Self-evaluation, or self-improvement (Simpson, 1966), not only brings about improved teaching preparation but also helps teachers to define their roles in order to develop their professional identities. Norris (1993) suggests that teachers should be self-reflective and aware of how teaching problems have occurred in their practice. Self-evaluation could break the cycle of old influences and initiate new ones. It forms the basis for rational change and helps teachers to systematically improve their performance.

How do teachers self-evaluate their teaching practice?

For McNiff (2001), the process of self-evaluation begins with the question *'How do I improve my practice?'*, originally addressed by Whitehead (1989) in investigating individual teachers' practice. Good teachers are constantly seeking better ways to present materials and more efficient ways of teaching and learning. Teachers can raise their awareness of teaching and learning problems by undertaking action research, with a result that they would become more critical and reflective about their own practice (Dickens and Germaine, 1998; Beverly, 1993). Dickens and Germaine (1998) and Rawntree (1997) believe that it is unnecessary to self-evaluate in a systematic way. Teachers are likely to self-evaluate informally in various techniques. Occasional reflection about what has happened in the classroom is the most practical process of obtaining data for developing teaching practice (Beach and Reinhartz, 2000; Lester, 1998; Sharp, 2003). Personal reflection can lead to concrete ideas for improving teaching practice, working environment, relationship with students, and success. By this, teachers will be aware of their improvement, their achievements, their interests, their strengths,

and their weaknesses (Tenbrink, 1974). Nevertheless, self-improvement does not come automatically (Kinney, 1958). It depends on how often individuals would like to self-evaluate the effectiveness of their teaching practice.

The importance of formal criteria of 'self-evaluation'

Basically, self-evaluation is the process of obtaining information by using personal views of teachers. Performing evaluation could be very subjective but could be objective if there are rigid criteria (Tenbrink, 1974). Some scholars argue that teachers can learn and develop professionally if they are given criteria by the institution to help them evaluate themselves. Just as Dickens and Germaine (1998) assert that specific criteria help teachers focus on a particular aspect of their teaching, they believe teachers would be less biased, and that more reliable reflection and helpful constructive ideas for teaching practice would be obtained. This can bring about sensible improvement (Norris, 1993). Further evaluation and feedback from colleagues, senior inspectors, and students would make teachers' self-evaluation less biased as well.

Research on teachers' self-evaluation

A number of previous studies in teachers' self-evaluation and comments on how it works in practice in various contexts have been explored. Ting Kao's study (2003) on elementary school teachers' efficacy of self-evaluation, for example, appears useful for teachers to conduct self-examination, and for educational and school administrators to improve teachers' teaching efficiency and professional development. The study of Yunian and Ness (1999) reveals that self-evaluation is an effective means of measuring teaching and learning performances in a language programme and of improving the teaching process. Teachers can evaluate their teaching and adjust their teaching strategies to meet the learners' needs and the requirements of the programme. From the study of teacher trainers' assessment of their effective teaching, Rosenberg (2002) found that individual teachers have their own personal systems to judge what effective teaching is. Self-evaluation, therefore, has been recognised as one of the important tools particularly relevant to the teaching profession. Adrens (2001) comments that effective teaching requires careful and reflective thought about what a teacher is doing and the effect of his/ her action on students' social and academic learning. The discussions of the research studies regarding self-evaluation could be useful for self-improvement of teacher in teaching practices as well as the implications for teacher education. As in the study of Lourdusamy and Khine (2001), the researchers postulate that teachers and learners can benefit from the self-evaluation of interpersonal behaviour by modifying their teaching or learning strategies, thus improving their teaching performances.

METHODS

This research is a qualitative study and based on an interpretive approach. It is concerned with subjective meaning in a particular context. 18 Thai English language teachers of a private university who have been teaching English at university level for more than two years were targeted, with the ages ranged from twenty-seven to more than fifty. They hold at least Master's degrees in TESOL and Applied Linguistics.

Two data collection methods, an open-ended questionnaire and a semi-structured in-depth interview, were employed. The questions used for both methods were similar in

nature but in the interview they were elaborated as appropriate. The questionnaire consisted of five open-ended question items, deliberately designed to answer the research questions regarding the teachers' self-evaluation. The participants were selected based on their willingness and availability. The participants were well informed about the research objectives and were also assured that all their names and information would be kept confidential. The questionnaire data were analysed first by identifying the main constructs into categories. Followed up interviews were carried out with all participants. Each interview lasted approximately 30-45 minutes. The interview scripts were translated into English and returned to the interviewees via e-mail to allow them to review the scripts and add any additional information. Then the analysis of the interview data was built on by matching the interview with the questionnaire data. The mismatch data was also considered.

Limitations

In relation to the small-scale nature of this research, the research findings are limited in generalisability. Nevertheless, I hope that the results will provide insights into other similar situations. In reality, it is not possible to comprehend all teachers' views towards self-evaluation. As a minimum, I intended to understand the awareness of the participants of self-evaluation, and to encourage them to realise how this issue is crucial to the development of the educational system in this context.

FINDINGS AND DISCUSSION

"What is teachers' self-evaluation?"

The majority of participants considered self-evaluation as an assessment of teachers' teaching practice, whether they could help students to achieve the learning objectives. As one wrote: *"It is a step in which a teacher takes time in assessing his/her teaching methods and students whether they all meet the objective of a particular subject."* Considering further improvement, a fewer number saw its value in giving feedback for improving teaching practice. Only very few commented on the role of the evaluation as an assessment method or as the most important task. During the interview, almost half explained that self-evaluation was a self-development method regarding the teaching performance of individuals. Five teachers recognised self-evaluation as a method of assessment in the system of quality assurance. One explained: *"It is an important function in the system of quality assurance. Teacher evaluation would be implemented as the first step of assessing the educational system in any academic institution."* Two other teachers commented that self-evaluation was time consuming as teachers need to observe and assess their teaching methods and learning outcomes whether they all met the course objectives. Interestingly, another participant compared self-evaluation to a mirror which helped teachers to be aware of their performance.

The participants generally perceived self-evaluation to be a useful method providing feedback on teaching practice and further development in their teaching career. This is a typical view which was also reported in the literature (Acheson and Smith, 1986; Holly, 1986); the feedback could help teachers identify and solve teaching problems. With regard to the system of quality assurance, most Thai universities give much greater priority to teaching excellence. Thus, the formal evaluation for teaching practice is regularly conducted according to the assessment criteria of quality assurance. Teachers'

self-evaluation could be a primary step for teachers to personally reflect on their teaching performance. In this way it is similar to a formative evaluation (Scriven, 1973) which is concerned with raising teachers' awareness and bringing about improvement of classroom practice (Dickens and Germaine, 1998). As a result, the teachers will be prepared for the next step of formal evaluation.

"Have you ever considered evaluating yourself? If so, what have you learned?"

The questionnaire results reveal that most of the participants have evaluated themselves. Further explanation was offered during the interview. Out of 18, 15 teachers have considered evaluating themselves because they basically wanted to know how they performed their teaching. They informally assessed themselves by using their personal criteria of judgement. One of them explained: *"What I did could be called 'informal self-evaluation'. I used my perception to assess my teaching methods. While teaching, I observed my students' reaction and reflected my teaching."* Another two teachers who have never considered evaluating themselves explained that they did not know how to assess themselves, or what the formal criteria of self-evaluation were. One said: *"I have never self-evaluated my teaching. I'm not sure that I can do it impartially. If I knew what the criteria of evaluation were, I would do it."*

The finding that most of the teachers evaluated their teaching practice informally coincides with Dickens and Germaine (1998) who claim that teachers are likely to self-evaluate informally in various techniques. Rosenberg's study (2002) also reveals that individual teachers have their personal systems of judging what effective teaching is. From the interview responses, most of the teachers preferred to evaluate their teaching practice after finishing their classes. At the end of each lesson, the teachers always asked themselves whether they were satisfied with their teaching quality and what they would plan to implement to attain further improvement. On the other hand, the two teachers who have never evaluated themselves claimed that they were not informed what the formal criteria of self-evaluation are. In this regard, personal views of the individuals could be very subjective or could be objective if there are rigid criteria of self-evaluation (Tenbrink, 1974). I would say that these two teachers saw the importance of formal criteria of self-evaluation as outlined by Dickens and Germaine (1998). They believed that specific criteria would help teachers become less biased and would bring about more reliable reflection.

"What have you learned from evaluating yourself?"

The questionnaire results revealed that what the teachers had learned from evaluating themselves helped them to be aware of a number of aspects. The majority of responses related to the awareness of their teaching quality: how they performed their teaching and what their weaknesses were. Fewer teachers were concerned with learners' needs and learning more about their teaching methods. With regard to the latter, one of them wrote: *"The evaluation helps me to improve my teaching techniques and teaching materials because it reflects whether what I taught served my students' needs. I have found it is really useful."* Some additional views emerged from the interview. Seven teachers had learned that self-evaluation helped them to be more confident in teaching. One reflected: *"My self-evaluation has greatly helped me to improve my teaching performance and increase my self-confidence in teaching practice."* Only two teachers thought that they needed further teacher training to enhance their teaching skills.

The responses to this question coincide with various investigations and comments regarding what the teachers have learned from self-evaluation. The study of Yunian and Ness (1999), for example, reveals that after evaluating their teaching, the teachers knew how to adjust their teaching strategies to meet the learners' needs and the requirements of the programme. For Tenbrink (1974), self-evaluation can lead to concrete ideas for improving teaching practice because personal reflection could help teachers to be aware of their improvement, strengths, and weaknesses. Teacher training regarding teaching techniques might be required. The present study also reveals that some teachers have learned what their weaknesses in teaching practice were and have tried to improve themselves. One of them said: *"What were successfully done in classes is better to continue doing and what did not work well in classes would be taken into consideration for further improvement."* When their teaching practice was improved, they would certainly have more confidence. In reality, however, most people would rather know what their good points were. As one respondent claimed, for example, some highly-experienced teachers might overlook their weaknesses in teaching practices. As a result, they could not improve their teaching practice and could not obtain the same professional development as other teachers.

"How important is teachers' self-evaluation in your teaching career?"

The questionnaire responses revealed that all participants recognised that self-evaluation was very important to a teaching career. Eight teachers had the view that self-evaluation could bring about teaching improvement whereas fewer responses mentioned by equal number of participants, related to success in teaching and becoming more active. Very few teachers felt self-evaluation had made them more aware of their duties and responsibilities. One of them explained: *"In terms of teachers' job description, self-evaluation could help me to realise whether my performance was relevant to what I needed to do."* During the interview, eight participants were of the opinion that self-evaluation could make their teaching career more challenging: that teaching practice should be continuously evaluated for improvement otherwise it would no longer be interesting. One participant explained: *"If teachers have never evaluated themselves, there won't be any improvement in their teaching practice. Their teaching career would be unchallenging and finally the teachers will be inactive."* Seven other participants considered that self-evaluation contributes to their becoming more effective teachers, while three participants claimed that self-evaluation provided insightful reflections on teaching practice. One of them said: *"The more teachers concentrated on their self-evaluation, the more insightful reflection they would obtain."*

The importance of self-evaluation in one's teaching career has been much reviewed in the literature of teacher evaluation (e.g. Beach and Reinhartz, 2000; Dickens and Germaine, 1998; Kemmis and McTaggart, 1982; Wanzare, 2002). Regarding this study, the participants were concerned about improving their teaching and professional development. They perceived that self-evaluation would be useful for their teaching performance and would play a greater role in a successful teaching career. Additionally, if teachers have never looked back to what they have done, in my opinion, students cannot obtain great benefits and teaching can become uninteresting.

"What are the advantages and disadvantages of teachers' self-evaluation?"

Some of the questionnaire results showed similar responses to previous questions regarding what the participants had learned from evaluating themselves and the importance of self-evaluation in their teaching career. The majority of responses related to learning more about one's teaching practice: its effectiveness and ways of improving. Fewer responses related to finding out more about the students', their needs. One participant commented: *"Teaching is a dynamic activity. Teachers have to regularly develop new teaching methods in relation to the current needs of the students."* An additional advantage mentioned concerned teachers' developing enthusiasm especially preparing themselves and the lessons. The participants provided more interesting information about advantages of self-evaluation during the interview. Nine teachers believed that self-evaluation could help them to forecast and to avoid teaching problems. Six other teachers thought that students could obtain well prepared lessons and therefore achieve learning goals. With regard to this view, one teacher said: *"Teacher's self-evaluation can encourage teachers to be more responsible for their teaching preparation. Teachers will be aware of what they should do to help students understand next lessons."* Few participants thought that teachers were able to improve their academic knowledge in English language teaching and learning at university level. In addition, another commented that when performing self-evaluation, there was no feeling of nervousness due to being evaluated by senior inspectors. She said: *"Personal reflection will show the improvement of their teaching skills without any depressions from others' viewpoints."*

Regarding the disadvantages of self-evaluation, the vast majority of the participants agreed that teachers might be biased towards their evaluation. As one teacher wrote: *"Teachers cannot get accurate results of self-evaluation since they tend to bias and might overlook their weaknesses."* Moreover, two participants responded that they could not see any disadvantage of self-evaluation. During the interview, the majority of the participants thought that self-evaluation was unreliable because individual teachers had personal criteria when assessing their teaching practice. One commented: *"Self-evaluation is unreliable because teachers will certainly have personal criteria to self-evaluate their teaching practice."*

According to Tenbrink (1974), good teachers should constantly find better ways to have efficient ways of teaching and learning. In order to do this, teachers must be aware of their strengths and weaknesses in teaching practice. Teachers have different methods for assessing themselves. From the study, I noticed that some participants evaluated their teaching practice in a cyclic manner, which could be divided into three different phases—before teaching, while teaching, and after teaching. Before teaching, they prepared their teaching by reflecting on their teaching performance as to whether it needed to be improved. While teaching, they focused on students' needs and motivations. After teaching, they assessed their teaching practice as to whether it met their expectations or not.

In the majority of cases, self-evaluation benefited the teachers themselves and their students. For example, students received well prepared lessons, as a result of teachers' self-evaluation, leading to improvement in teaching practice. Nevertheless, Kinney (1958) claims that self-improvement does not come automatically: it depends on how often individuals want to self-evaluate the effectiveness of their teaching practice.

Similarly, Lester (1998) and Sharp (2003) believe that occasional reflection in class helps teachers to develop their teaching practice. This compares with the comment of one participant who said: *"Teachers need to evaluate their teaching practice as frequently as they can. In so doing, students are ones who obtain most advantages."* As self-evaluation is a form of personal assessment, there is no comment or feedback from senior inspectors, teachers, and students. The participants felt free to evaluate themselves in order to achieve better improvement. In doing so, the disadvantages of teachers' self-evaluation for teaching practice were raised. Most of the participants focused on bias as one of the main problems of self-evaluation. Since there was no senior inspector involved in self-evaluation, some of the participants might be too confident to evaluate their teaching practice. They might be overly concerned about their good teaching practice, which is not particularly beneficial for improving and developing their teaching career and learners' achievement. The criteria for self-evaluation were normally set according to a personal standard. Thus, self-evaluation was likely to be subjective and unreliable.

"Do you have other comments in relation to teachers' self-evaluation? If so, please describe them."

From the questionnaire results, the most frequently expressed comment, mentioned by all 18 participants, related to the need for honesty in carrying out self-evaluation. During the interview, the most frequently expressed one related to feedback from other teachers, senior inspectors, and students. In order to effectively evaluate themselves, fewer respondents agreed that teachers needed training. One commented: *"I would love to evaluate my teaching practice seriously only if I am informed how to and what the acceptable criteria are."* A further comment expressed by only a small number of participants was the need for assessment. One commented on the significance of self-evaluation as an important tool for assessing teaching quality and developing the educational system.

It is rather difficult to self-evaluate teaching practice honestly. Sometimes, people need a core of comfort by considering only their good points; otherwise they might feel that everything is wrong and nothing can be improved. With regard to this point, one participant commented: *"Being honest to oneself might lead to one's discouragement."* However, all of the participants were concerned about unbiased self-evaluation. Certainly, subjective viewpoints could have happened. Feedback from others would be helpful to provide other angles of reflection. Some participants, for example, compared their self-evaluation to students' feedback regarding teaching performance.

According to Tenbrink (1974), teacher's self-evaluation is the process of obtaining information and using it to form judgements from personal views of teachers. In order to gain more reliable self-evaluation, teachers need to be trained and informed about what self-evaluation is and how to evaluate their teaching practice. In being trained as to how to evaluate themselves, the personal criteria of teachers' self-evaluation could be balanced with standardised criteria. From the study, for example, some teachers evaluated themselves by applying the criteria of a formal evaluation which was set by senior inspectors of the university. No matter how teachers evaluate themselves, explicit criteria should be concerned when teachers have personal judgement towards their teaching performance (Dickens and Germaine, 1998). Additionally, teachers' self-evaluation

should be implemented as an important tool for assessing teaching quality. In doing so, it could bring about professional development in teaching career.

Implications

The findings of this study suggest several implications. Firstly, standardised criteria for teachers' self-evaluation need to be established in order to make the evaluation more reliable. In this regard, Dickens and Germaine (1998) consider that specific criteria help teachers to focus on a particular aspect of their teaching. As a result, teachers would be less biased, and more reliable reflection and helpful constructive ideas for teaching practice would be obtained. Were the academic administrators more concerned about this issue, it would help strengthen the system of quality assurance of this particular context. Taken this into account, it is possible that the academic administration of the university plays a role in formulating these assessment criteria in matters of systematic self-evaluation of teaching to guarantee quality of teaching practice. When the self-evaluation is performed under the formal criteria, teaching quality can be further assessed by other kinds of evaluation such as peer-evaluation and external evaluation.

With regard to McNiff (2001), the process of self-evaluation begins with the question *"How do I improve myself?"*, originally addressed by Whitehead (1989). In the area of TESOL, the second implication of this research would concern teacher training regarding teachers' self-evaluation. By doing this, teachers will be informed how to correctly self-evaluate their teaching practice with benefits both of themselves and their students. In my work context, it would be beneficial for new teachers and experienced teachers to be given in-service self-evaluation training. This would give them the practical skills and knowledge they need for assessing and improving their teaching practice.

The significance of teachers' self-evaluation in their teaching career has been recognised in the teacher evaluation literature (e.g. Beach and Reinhartz, 2000; Dickens and Germain, 1998; Wanzare, 2002). Nevertheless, self-evaluation has not been considered a crucial element for a teaching career in my particular context. Hence, as the final implication of this study, there should be more formal discussions on specific issues and concerns related to professional development of Thai English teachers. On a regular basis, seminars and workshops should be organised in my work context to increase the opportunities for the development of teaching professionals and to help define where the English teachers are now in terms of English language teacher development. Consequently, the important issue should be raised in the university annual conference which is recognised as a forum for academic discussions. In this way, various new perspectives on teachers' self-evaluation will be given greater consideration.

CONCLUSION

Most of the teachers had slightly different explanations regarding teachers' self-evaluation because they had never been formally informed what self-evaluation was and how to evaluate themselves. They had considered how important self-evaluation was for their teaching career. Various interesting aspects regarding the advantages and disadvantages of self-evaluation were revealed. Students' feedback on teaching performance could not provide the whole reflection on their teaching practice. Most teachers, therefore, informally evaluate themselves in order to investigate what really needs to be improved or changed. Diverse methods of self-evaluation depend on personal

styles and criteria of judgement, with the same purpose of improving their teaching practice. Quality assurance was considered relevant to teachers' self-evaluation due to the university criteria of teaching assessment with which all of the teachers should be concerned. When evaluating themselves, some of the teachers not only evaluated themselves according to their own personal criteria but also were concerned about the formal criteria in relation to the quality assurance. To improve teachers' self-awareness in this respect, teachers' self-evaluation would be considered one of the important issues regarding professional development. I believe that the teaching practice will improve only if teachers themselves always evaluate the quality of their teaching with an open mind. In this way, students can then obtain great benefits and achieve their goals of learning.

Recommendations for future research

The study can be replicated in other contexts using similar or different methods as appropriate, in order to offer a more complete view of the issue of teachers' self-evaluation. Research studies could even be stimulated in various educational levels and settings in Thailand. Further, the results obtained from these studies in different contexts could be analysed and compared in order to gain a better insight. Moreover, a study of students' evaluation towards teachers' teaching practice would also be worthy of consideration. In this way, it is possible to posit whether there is a mismatch or resemblance between how teachers evaluate their teaching practice and how students assess the teaching practice of their teachers.

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SUCCESS FACTORS UNDERPINNING STUDENTS' WEBBOARD: TOWARDS ON-LINE COMMUNITY FOR HIGHER EDUCATION INSTITUTIONS

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ABSTRACT

Higher education institutions provide a large amount of formal information through various communication channels but informal or non-academic information are neglected. Students need to rely on colleagues for such information. The introduction of computer mediated communication system (CMC) or group support system (GSS) in the form of email, chat room and webboard upgrade the communication flow among colleagues to a broader scope. This study aimed at investigating students' perceptions towards issues to be covered in a university's GSS, with the focus on student's webboard system. A content analysis of personal interviews with students in a university was performed to elicit the features required in a student's webboard. These were translated into an instrument and administered in four universities to measure the students' perceived importance of these factors. Results from the principal components analysis with varimax rotation revealed that a webboard should be used to communicate with teachers for obtaining teaching materials; be organized for easy browsing through topics; include discussions about the university procedures and system; have timely responses; have up-to-date knowledge; have up-to-date information; be used as an open forum for expressing personal opinions; be regulated properly; have going on discussions and interactions; be used as a meeting place for those who have common interests; and be used for business purposes.

INTRODUCTION

Students need both academic and non-academic information in order to function in higher education institutions. Formal, academic information is usually available through many channels (Tanchaisak, Saengsook, & Wattanapanit, 2006). Few universities offer news and information for general interests, non-university or non-academic information to students. Information such as outside dormitories, nice food stalls, or which instructor is more lenient than others, etc. are seldom supplied by universities. Hence, friends become the preferred choice of information source among students.

Most universities develop computer mediated group support systems (GSS) upon their intranet and internet infrastructure. Universities provide internet accounts and access facilities to their students. These systems are used as one of the communication channels among students and faculty members. The students' internet proficiency together with the convenience in accessing the internet helps increase the popularity of the GSS.

The GSS expands and connects circles of friends to include larger groups of students into discussion forums. Popular GSS tools are email, chat rooms, and webboards. Chat room is a synchronous system, the interactions are on real-time basis, while email and webboard are asynchronous systems. Webboard has the capability to save and organize more information than synchronous system (Hara, Bonk, & Angeli, 1998) and it has wider coverage than the email system. Webboard is organized in a way

that there are open forums for people to post messages in an appropriate forum or room so that other participants can read and comment upon. Anybody can join webboard discussions with anybody else, they are not limited only to people on the email lists as in case of email system. Information or questions can be requested on a webboard for later review. Webboard system is a rich medium and it has high potential to promote students' information accessibility. Moreover, it helps students to cut through the traditional bureaucratic structure and red tape (Buchberger et al., 2005).

Public webboards are popular in Thai society. Many students are heavy users of public webboard. Although, most, if not all, higher education institutions are equipped with internet infrastructure and systems, the attempt to initiate university webboard in many institutions failed because students do not use them. It would be of great benefit if higher education institutions can promote student webboards to support students' lives and eventually create a better learning community and environment. The identification of features students perceive as important for webboards can contribute to the development of a successful student webboard.

LITERATURE REVIEW

Joinson (2001) reported that computer mediated communication (CMC) increased the degree of self-disclosure compared to face-to-face communication. Participants in webboard were visually anonymous (Rains, 2007) hence they felt more comfortable to reveal some otherwise difficult or too shameful to admit in face-to-face situations. The norm of reciprocity (Kelly & McKillop, 1996) suggested that when one person disclosed personal information, the interacting counterpart felt obliged to disclose some of their personal information in return. Even with friends who had physical interactions, CMC decreased the threshold and barriers for self-disclosure resulting in exchanging of more personal information. This helped establish a better understanding among people and increased the level of trust. The more the personal information exchanged, the higher the level of perceived closeness and trust became. CMC increased the opportunity for creating bonds of friendship. It facilitated the surfacing of the reasons behind differences of opinions through dialogues (Gear et al., 2003). Furthermore, Wheelan, Davidson and Tilin (2003) reported that the longer the time people engaged in group discussion, the less fight statements but more work statements appeared in workgroup communication. This resulted in the strengthening of the intra-community bond. Parks & Floyd (1995) reported that 60% of usenet participants reported forming personal relationships with other newsgroup (one type of webboard) users.

Opinions were welcomed and discussed on webboards. The characteristic of webboard in maintaining anonymity led to the promotion of diversity (Schullery & Schullery, 2006). Those who were different were more confident in expressing their opinions. Students' diversity was regulated by social negotiations that formed social reality (Kim & Kim, 2001) and appropriation of meaning (Salomon, 1998) for differences. A strong student community was hence the result from participations in webboard. On the learning side, GSS could increase collaborative learning through the stimulation of learners' contributions in terms of initiated ideas, questions and feedback (Kwok et al., 2002). Furthermore, the capability of webboard to save messages for future retrieval (Hara, Bonk, & Angeli, 1998) provided the foundation for the development of a database system that is an important element for knowledge management process (Nonaka & Takeuchi, 1995).

Computer mediated communication (CMC) offered the benefits of time dependence, place dependence, the structure of communication and richness of communication (Harasim, 1990). Silwka (2003) suggested that individuals in education institutions joined network for its political function – to meet the like-minded; information function – exchanges of information; psychological function – opportunities for collaboration and exchanges with others; skills function – opportunities to learn new skills from others. Literature on the types of information required was scarce and was mostly limited to CMC or webboard discussions for learning purposes only. This study, hence, aimed at examining the specific issues students reported that they wanted from a student webboard for their functioning in higher education institutions. The offering of such issues would stimulate the students' participation in the webboard.

METHODOLOGY

This study was an exploratory study aimed at exploring university students' perceptions towards the use of student's webboard. The population in the study was students in four higher education institutions in Bangkok. Respondents in the study were recruited using the convenience sampling method. Data collection in this study involved two stages.

First, face-to-face interviews were conducted in a university where students' webboard was popularly used to collect initial data about issues that students reported they wanted or liked in the webboard. These data were content analyzed into items for the next stage of data collection. Second, the researcher developed a questionnaire that included the abovementioned items. Students were asked to rate their perceived importance for each item on a 5-point Likert scale.

The Interviews

Issues students perceived as important were elicited from face-to-face interview with 80 students, individual or small group at a time, in a university during the first month of the semester. The researcher located for participants in the university's cafeteria based on convenience sampling procedure. The researcher asked students to describe issues they wanted to be included in a student's webboard or issues they liked in the university's existing student webboard. All of them reported they used the internet to a certain extent and they were familiar with the webboard system. The researcher asked them to clarify their responses when they were ambiguous. Their answers and explanations were noted. These explanations assisted in the data analysis and discussion stages. Then, content analysis was performed to cluster similar answers in terms of meanings with each other. Basically, the majority of students mentioned that student's webboard should include the discussion of information, knowledge, advice, opinions, and news of various issues. Some responses were regarded to webboard administration. The types of information together with other requirements were categorized into groups by three independent coders. The inter-coder reliability from the independent coding was 87.4%. The remaining items that coders were uncertain about, were left for further discussion among coders and the researcher and assigned to appropriate items based on unanimous agreement of the meanings. Fifty three items were extracted from the information obtained from the interviews (see appendix 1). These items were edited for the next stage of data collection.

The Questionnaire

A questionnaire was composed from the fifty-three items that students reported they preferred in student's webboard. A pilot test was performed with 30 students to test the face validity and reliability of the questionnaire. The resulting Cronbach's alpha was .84. Four research assistants administered the questionnaire in four universities by convenience sampling method. The data were collected in the universities' cafeterias. Students were asked to rate whether each item was important and/or should be included in the student's webboard on a 5-point Likert scale. The scores ranged from 1 = not important at all/should not be included in the webboard; 2 = not important/no need to be included; 3 = moderately important/does not matter; 4 = important/should be included; and 5 = very important/must be included.

Five hundred and eighteen (518) usable sets of questionnaire were obtained. The principle components analysis with varimax with Kaiser normalization rotation was performed to determine the grouping and structure of data. Finally, the scores for items in each component were averaged to report the perceived importance of each component.

RESULTS

The results from the face-to-face interview were the fifty three issues mentioned above. The results from the questionnaire were reported as follows.

Principal Components Analysis

The mean communalities of all items was 0.64. Results from the unrotated principal component analysis revealed a couple items with double loadings. These items were deleted and the remaining items were rotated by varimax rotation procedure. The scree test suggested retaining only 3 components since the percentage variance explained curve leveled off after the third factor. However, the cumulative variance explained from these 3 components accounted for only 34.6%. Kaiser criterion (Kaiser, 1960) suggested that components whose eigenvalue was greater than 1.00 should be maintained. Apart from the first three clear-cut components, another 8 components also had eigenvalues greater than 1.00 and the cumulative variance explained for 11 components increased to 63.8%, in other word, these eleven factors together accounted for 63.8% of total variance. Hence, three components were extracted and the remaining 8 components were also maintained for informative purpose.

Steven (1996) provided a table of critical values for a correlation coefficient at α = .01 for a two-tailed test for principal components analysis loadings. For n = 518, only loadings in absolute value above .230 were statistically significant. Moreover, when sample size is at least 300, factors with low loadings (< .40) were also informative and should be interpreted. So the results included all item loadings higher than .230 in the components. Table 1 shows the factor loadings for the eleven components.

Table 1 Factor Matrix for extracted components

Rotated Component Matrix[a]

	Component										
	1	2	3	4	5	6	7	8	9	10	11
VAR00036	.758										
VAR00038	.744										
VAR00037	.742										
VAR00035	.712				.305						
VAR00030	.554				.319						
VAR00011		.766									
VAR00013		.762									
VAR00014		.709									
VAR00012		.708		.269							
VAR00021		.418	.342	.354							
VAR00025			.743								
VAR00024			.699	.250							
VAR00023		.340	.610								
VAR00049				.694							
VAR00050				.673							
VAR00051			.406	.601		.265					
VAR00032					.886						
VAR00031					.825						
VAR00033	.369				.507				.271		
VAR00019						.739					
VAR00020			.292			.601			.276		
VAR00017			.299	.283		.473	.238				
VAR00005						.276	.728				
VAR00004	.236	.295					.590				
VAR00040				.301			.496	.245			
VAR00043								.677			
VAR00048					.281			.535			
VAR00044								.470		.320	
VAR00042				.409				.453			
VAR00018	.294			.279		.400		.433		.244	
VAR00009		.280							.707		
VAR00010		.360							.597		
VAR00052			.377						.495		
VAR00001							.251			.735	
VAR00003										.723	.252
VAR00028											.884
VAR00027							.319			.386	.516

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 10 iterations.

Component 1 included items regarding the perceived importance of opportunities to interact with those who had common interests to seek new friends and sharing works of common interests. Component 2 was about the requirements for a variety of knowledge. Component 3 related to the expectation for receiving of needed information quickly after posting. Component 4 was the organization of topics and categorization of the webboard for easy access. Component 5 was the requirement for using the webboard for posting business-related issues. Component 6 involved the exchanges of opinions with others. Component 7 was the exchange of up-to-date information. Component 8 included items related to the administration of the webboard to screen impolite and annoying posts. Component 9 was the preference for the dynamic interactions on the webboard. Component 10 was regarded to the discussion of announcements and news from the university. Component 11 was related to interaction with teachers and learning process.

The perceived importance scores for items in each component were averaged. Mean score and standard deviation for each item were reported in table 2 in descending order.

Table 2 Component contents and corresponding means and standard deviations in ranking order (n=518)

Descriptive Statistics

Component	Description	N	Mean	Std. Dev.
11	Interaction with teachers and learning process	518	4.5328	.58004
4	The organization of webboard	518	4.4698	.56801
10	Announcements and news from the university	518	4.3456	.57787
3	Timely responses	516	4.1667	.62886
2	Variety of knowledge	518	4.1066	.60794
7	Up-to-date information	518	4.0077	.56469
6	Exchanges of opinions	518	3.9215	.62150
8	Screening impolite and annoying posts	518	3.8656	.47776
9	The dynamic of the webboard	518	3.6654	.64270
1	Common interests	518	3.5309	.70327
5	Space for business purposes	518	2.9369	.84208
	Valid N (listwise)	516		

DISCUSSION

The quality of webboard in concealing the true identity but maintaining a presence (Rains, 2007) was one of the main considerations in using webboard. In general, students wanted to exchange information of various types with fellow students without revealing their true identity and be protected from disturbing topics. The results suggested the webboard moderator should maintain both contents and administration of the administration.

Materials for classes

Information and materials for learning process was the highest in the rank (mean = 4.53, SD = 0.58). Students were familiar with using webboard for this purpose themselves or they were likely to know that students in other faculties did. They realized that studying is of the highest priority. Several faculties had their own webboards which were accessed by only students in the faculty. The basic purposes were to use webboard as the medium for instructions and students' turning in of the assignments. These faculty's webboards should be consolidated into the university level's webboard while maintaining their specific purposes. Students from all faculties should be able to access the university-wide issues and access faculty-specific part when applicable. Then the network system could be more efficiently utilized.

The webboard administration

The second most important component was regarding to the organization of webboard (mean = 4.47, SD = 0.57). Apart from the contents of the webboard, the proper management of the webboard was considered very important. Students wanted to read through the webboard comfortably. A complex webboard with layers after layers of pages would be considered to be tiresome. Students wanted to know where the issues they wanted to read were and access them easily. The university should design simple

webboard and provide clear categorizations and naming of the forums so that students could browse or explore the webboard easily.

Tamed university-related information

The information students sought after were formal information from the university (mean = 4.35, SD = 0.58). Information received from webboard was presented in a different form from the university authorities or webpage. Student's webboard helped the interpretation of the information and discussions on methods to deal with the system. This kind of information was necessary for functioning in the university but students preferred to consult their peers rather than contacting the authorities through the formal channel because they would receive the answers enhancing the rigidity of the regulations, such as "no, you cannot do that" instead of learning the ways to get through their problems.

This finding had two implications. Firstly, on the university's service quality part, it suggested needed improvements on the service capacity and/or level on the administrative staff. From the researcher's experience with various public and private universities, the number of staff could not keep up with students' service requirements. Students had to line up and the staff had to rush all services, hence the service might not be as effective as it could be. The staff could not go into details with every student although they might want to. Moreover, sometimes, they had to repeat the same information or answer the same inquiries many times a day – a large amount of duplicated tasks.

Secondly, on the webboard part, the moderator should continuously collect all kinds of information from the university and organize them on the webboard for discussions and easy retrievals. Students wanted advice on the procedures, both direct and indirect, to do things in the university such as adding, dropping, changing major, exam procedures, and so on. Several media should be combined to support students' learning. The formal channels might be insufficient to provide information regarding the procedures and system hence friends and webboard became preferred choices for information (Tanchaisak, Saengsook & Wattanapanit, 2006). In case there was no information they required, they could post a question and wait for somebody to provide answers or advises. Since the true identity can be kept secret, university's authorities can interact in the webboard as well.

Timely responses

Teenagers were those who had limited patience. Students wanted their inquiries attended to quickly. This showed up as the fourth most important issues they wanted (mean = 4.17, SD = 0.63).

Variety of knowledge and up-to-date information

Although these two categories looked similar, they were clearly loaded on different components. This suggested a clear perceived distinction between the term "knowledge" and "information." CMC is a modern medium that can be updated very quickly. Students expected that the webboard system should offer this quality and provide them with a variety of knowledge (mean = 4.11, SD = 0.61, ranked in the fifth place) and up-to-date information (mean = 4.01, SD = 0.57, ranked in the sixth place). Moreover, webboard offered time for reflection about the topics discussed (Jonassen & Kwan, 2000; Moore, 2002). Students could comment and return to provide additional information or modify their original discussions resulting in the more refined and advancement of knowledge.

Exchanges of opinions with others

Students wanted to be related to others and learn the ways other people think (mean = 3.92, SD = 0.62). This component showed that students were open-minded and were willing to learn from colleagues. This finding evidenced that students were not ignorance. They only need proper treatment from the university. Students were willing to learn from colleagues because they considered themselves equal. The anonymity identity of people on the webboard allowed the expressing of different or contradicting ideas for others to learn.

The regulating of the webboard

Many webboards were spammed with impolite statements or annoying posts. Students found those irritating (mean = 3.87, SD = 0.48). The moderators should scrutinize the topics well and must have sufficient ability to judge whether a post should be deleted. The founder of Pantip.com, one of the most popular webboard in Thailand, suggested that one of the important criteria for success of the board was that he had moderators to carefully screen all comments (Piyawan, 2007). In a well regulated webboard such as Pantip.com, a peer control culture was eventually established over time and members assisted in reporting breaching of the board's norms.

The dynamic webboard

The amount of ongoing discussions and interactions were also an important issue (mean = 3.67, SD = 0.64). Students explained that the dynamic of the webboard made it interesting and could attract more participants. They could access the webboard many times and find accumulated topics and replies rather than logging in to find that the topics remain unchanged. Social influence of colleagues affects an individual's media assessments and choice (Fulk, Schmitz & Ryu, 1995). The more people post, the more interesting the board become and more people will visit and post their comments and vice versa. This might be the reason behind the failure of many universities webboard. If students found the webboard lacked lively discussion, they would turn away.

Connected to the like-minded

Interacting with those who were familiar and had common interest was another important issue (mean = 3.53, SD = 0.70). Webboard should serve as the source for leisure and meeting friends who share common interests.

Commercial purpose

The mean score for this is lower than 3.0 (mean = 2.94) which meant the students did not think this is an important issue, it did not matter if this was included or not. However this item has the highest SD (0.84). While some students thought it was not important but some considered it important (the middle probability area ranged from 2.10 – 3.78). Webboard could serve as an information center and medium for matching demand and supply (mean = 2.94, SD = 0.84). Those who had commercial transactions either as hobby or real business purposes would prefer this item while those who had not would consider this an unnecessary item. For those who wanted to buy or sell things or seek for jobs, the asynchronous quality of webboard allowed offers or requests to be posted for an extended period of time for potential buyers or sellers to notice. This facilitated the exchange process whether it was buying and selling or checking prices, or seeking for jobs.

CONCLUSION

The overall impression from the findings was that students wanted to keep up with information useful to them but unfortunately many universities' CMC do not provide these adequately. Most universities provide only university information on their

webpage. This is considered a one-way, top-down communication upon the students. The choosing of students' log-in name while keeping the real identity from the public is one of the most outstanding qualities of communication in the internet. Students would feel more confident in posting comments and opinions even true but negative ones. This condition should be maintained.

Higher education institutions should use the webboard as one of the tools to create a virtual university-wide community rather than letting the faculties distance themselves from others. The content on the university system, news, and announcement are similar for all faculties and such information were need by all students. This should be used as the tool to unite students across the university through the circle of webboard. Moreover, if more students from various faculties post in the webboard, more students will follow.

For future research, an experimental study is worth conducting to investigate whether the actual offering of the discussed content and regulating could stimulate the use of students' webboard other universities. Moreover, the investigation of other CMC is warranted for future research. There is also a need for future research in identifying demographic and/or other factors that might influence the contribution from students in the webboard.

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Appendix 1 Items students reported they wanted in university's webboard

1. Information relating to ongoing activities of the university	28. Submission of teachers' assignments
2. Assortments of information	29. Download teaching materials
3. University announcement	30. Channel to distribute personal works such as songs, characters, essays
4. Up-to-date news	
5. Exchange of news and information	31. Commercial transaction
6. Personal problems discussions	32. Check prices of products
7. Opportunity to express opinions	33. Medium for job postings such as music bands, camera man
8. Anonymity	
9. Advice others	34. Create relationship
10. Answers to others' queries	35. Meet new friend
11. Include various information that students should know	36. Meet those who have common interests
12. Information on issues students are interested in	37. Better understanding among people who are alike
13. A large number of topics	38. Discussion on the issues students want to discuss
14. Advice from experts in different areas	39. Nice and modern webpage
15. Interaction and dialogues of experts	40. Unique webpage
	41. Photographs on the page
16. Answers to questions regarding studying, registration, and other university processes	42. Constantly update the webpage
	43. Close scrutiny and regulating to prevent nuisance posts
17. Assure that someone will answer to our enquiries	44. Control the usage of impolite language
18. Fun topics	45. Block offensive comments
19. Opportunity for learning other people's opinions	46. Few advertisements
20. Exchange of opinions	47. Download music, software, music video, movie, photos
21. Updated information	48. Gossip
22. Reliable information	49. Easy to access the webboard
23. Useful information	50. Clear classification and organization of topics
24. Timely responses to queries	
25. Exchange of information in all areas and issues	51. Easy to use webboard
	52. Ongoing interactions
26. Class schedule postings	53. Activities on the webboard
27. Helps in checking and calculating grades	

IMPACT OF COL ON THE PARTICIPATION BEHAVIORAL PATTERN OF LEARNERS AND TUTORS IN THE ONLINE DISCUSSION FORUM

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ABSTRACT

Besides the face-to-face tutorial session and self-managed learning mode, online discussion forum is the third essential pillar of Open University Malaysia's (OUM) blended learning approach. The state-of-the-art Learning Management System (LMS) helps its learners and tutors to extend classroom lesson into virtual learning environment without barriers in terms of time and space. Earlier research has shown that only 64% have participated from the LMS system and only 0.3% of the posting by tutors are considered excellent. In order to trigger online discussion, the system of Collaborative Online Learning (COL) makes the tutor create guided questions to set off a productive virtual dialogue amongst learners.

Our research investigates the impact of COL on the participation behavior of 135 tutors and 5903 students from one COL subject in the subject "Learning Skills" and three non-COL subjects in Mathematics, Marketing and Human Resources Development. The participation behavioral pattern refers to postings and responses made by learners and tutors in the online forum. The results of the research revealed that COL causes a significant increase in the participation of learners. Therefore, recommendations can be derived at how applied COL can manage to reduce the number of non-participation of both tutors and learners, increase satisfaction and improve performance.

Keywords: Collaborative Online Learning, Participation Behavioral Pattern, Online Discussion Forum

INTRODUCTION

Online participation forms part of the blended learning approach adopted at Open University Malaysia (OUM) besides self-managed learning and face-to-face tutorial session. Huge amount of money has been invested by OUM to develop the state-of-the-art Learning Management System to provide online learning support to both its students and tutors in order to facilitate learning outside the classroom.

In a research carried out by Abtar Kaur (2004) to find out the effectiveness of online discussion forum, it was found that 64% of the participating students have benefited from the forum in terms of course content and also as an extension to their face-to-face session. The study also found that only 0.3% of the posting of tutors are considered excellent and 98% needed more effort to improve on its relevancy and content. According to the study,

"most of the tutors answered questions posted by learners without supporting knowledge building among learners." (p.64)

Beginning from the January 2005 semester, the Collaborative Online Learning (COL) approach was introduced on seven subjects to pilot test the COL with the objective of increasing participation both by the learners and tutors and also to improve on the quality of questions and answers posted. Under the COL, learners are provided with guided questions to be discussed via online forum among peers and the tutor will act as a facilitator and moderator.

Objective

The objective of this paper is to investigate the impact of COL on the participation behavior of learners and tutors in the online discussion forum of OUM. The focus of the study will be on the learners' and tutors' participation only, regardless of its content. The outcome of the research is important, as it will help enhance online teaching and learning and help engaged students. Students who are engaged often lead to their satisfaction and thus become a predictor of retention.

LITERATURE REVIEW

The findings of the research carried out by Stanford University 20 years ago using Tutored Video Instruction, has proven that students engaged in a collaborative learning environment outperformed those in a non-collaborative learning environment (Johnson & Johnson, 1996 as cited in Michael J. Sipusic et al., 1999). Collaborative learning has become the key factor that makes distance learning as good if not better than traditional courses (Hiltz & Wellman, 1997, as cited in Caroline H., 2003). Hiltz pointed out that "collaborative learning and student teamwork were the educational methodology." (p. 16)

Mansor Fadzil (2005) has proposed five critical success factors in developing online learning, one of which is the human factor – by developing a new learning culture where learning must be learner centered, interactive and engaged in a collaborative online learning.

Collaborative learning brings participants together in some kind of social interaction where they feel they are more involved and thus learns more effectively. Online tutors play an important role in reassuring learners the support, making learners feel they have a good rapport with their tutors and that they are being assessed and guided. (Jeniffer Hofmann, 2004)

The use of online discussion forum could be very useful in teaching critical thinking as the Internet removes traditional time/place barriers. According to Suncana Kukolja Taradi and Milan Taradi (2004), discussion and writing are very powerful ways to

support learning. However it also creates new barriers in technology and behavioral changes due to lack of motivation and professional incentives.

According to a research conducted by Mark Bullen (1998), the collaborative online learning or computer conferencing should be given serious consideration to facilitate interaction and critical thinking. He pointed out several factors that can facilitate critical thinking among which include appropriate course design, instructor interventions, content, and students' characteristics.

Aviv and Golan (1998, as cited in Abtar Kaur, 2004), noted that "students' participation is often minimal without an instructor's participation." (p. 14). They suggested that planned, focused and guided online discussions can result in successful learning experience. Providing feedback especially encouraging comments, pointing out errors and correcting them and using leading questions in an online discussion helps in guiding and directing students to follow and continue their posting. (Kannan & Macnish, 2000, as cited in Abtar Kaur, 2004). According to Benfield (2002, as cited in Abtar Kaur, 2004) providing timely feedback is important as questions posted by students left unanswered for too long will discourage posting.

Kuldip Kaur (2005), in her research pointed out that learners sometimes do not participate in online forum because they do not know what to ask. According to Caron Osberg (2002), building collaborative components of e-learning into online training can foster learner interaction and feedback through threaded discussions and virtual classes where participants can share their ideas and experiences and benefit from that exchange. According to Johnson and Johnson (1996, as cited in Michael J. Sipusic et al., 1999), COL provides more "airtime" for students to ask questions and acquire new information. Students who are engaged in COL often make public conjectures about their knowledge. Feedback from students helped other group members refine their ideas.

Kinzie (2005) pointed out that students can learn under the right conditions. He noted that using a variety of active and collaborative pedagogical approaches can help engaged the students and address the learning of students who are less prepared to succeed. This is supported by the Self-Determination Theory (SDT) developed by Deci and Ryan (2000) which states that human are motivated by their innate psychological needs for competence, autonomy and relatedness.

RESEARCH METHODOLOGY

The research was carried out using data collected from the Online Discussion Monitoring section of the Learning Management System of OUM. It is based on one COL course and three non-COL courses and a comparison are then made to identify the participation behavioral pattern based on a set of indicators. The COL course selected in this research is the Learning Skills for Open and Distance Learners and the non-COL courses are

randomly selected, which involved the Management of Mathematics, Strategic Management and Human Resources Development courses.

The data collected for these courses involved the participation of 125 tutors and 5903 students in the online discussion forum at 95 per cent confidence level and one per cent confidence interval. These data are then tabulated and analyzed using Microsoft Excel. The number of posting or hits made by both students and tutors taken into consideration in the study will be a minimum of one posting in the online forum regardless of the content of the posting. The research is based on the hypothesis that guided online discussion via COL can help increase participation from both tutors and students.

To help understand the findings of the research, the following key terms are defined:

a. Number of Hits – refers to number of posting made in the online discussion forum
b. Total Hits – refers to total number of posting made in the online discussion forum
c. Average hits/tutor - refers to the total number of posting made by tutors divided by the total number tutors
d. Average hits/student – refers to the number of posting made by all divided by the number of students
e. Participation behavioral pattern – refers to the frequency of each category of hits made
f. General activities – refers to hits made for COL and non-COL related activities in the online discussion forum
g. Student's Participation Rate – refers to number of students who make at least one posting in the online discussion forum

FINDINGS

The following are the findings of the research:

a. Comparing Average Hits/Tutor and Average Hits/Student for COL course:

A total of 43,348 hits were captured in this course with 69.5% or 30,111 hits came from COL related activities. Out of the 8,551 hits made by tutors, 60.5% or 5,173 hits captured, relates to COL activities. A frequency distribution table based on the average total number of hits for per tutor and average number of hits per student for these data is as shown in Table. 1.

COL	General				COL			
Course	Ave Hits/tutor		Ave Hits/Stud		Ave Hits/tutor		Ave Hits/Stud	
Average Number of Hits	Freq.	%	Freq.	%	Freq.	%	Freq.	%
0 - 1	40	46.0	1	1.1	37	42.5	0	0.0
1 - 2	21	24.1	1	1.1	21	24.1	0	0.0

2 - 3	12	13.8	2	2.3	12	13.8	1	1.1
3 - 4	5	5.7	6	6.9	6	6.9	2	2.3
4 - 5	6	6.9	7	8.0	5	5.7	7	8.0
5 - 6	0	0.0	10	11.5	2	2.3	7	8.0
6 - 7	1	1.1	13	14.9	0	0.0	7	8.0
7 - 8	0	0.0	4	4.6	2	2.3	9	10.3
8 - 9	0	0.0	12	13.8	0	0.0	10	11.5
9 - 10	1	1.1	10	11.5	0	0.0	11	12.6
10 or more	1	1.1	21	24.1	2	2.3	33	37.9
Total	87	100	87	100	87	100	87	100

Table: 1

Generally the participation behavioral pattern displayed for general and COL related activities were similar. Figure 1 and 2 represent the participation behavioral pattern of tutors and students respectively for the COL course. Note that the frequency for tutors center on an average hits per tutor of between zero to three whereas for students, the frequency is above six hits per student. The same trend is not displayed in the non-COL courses.
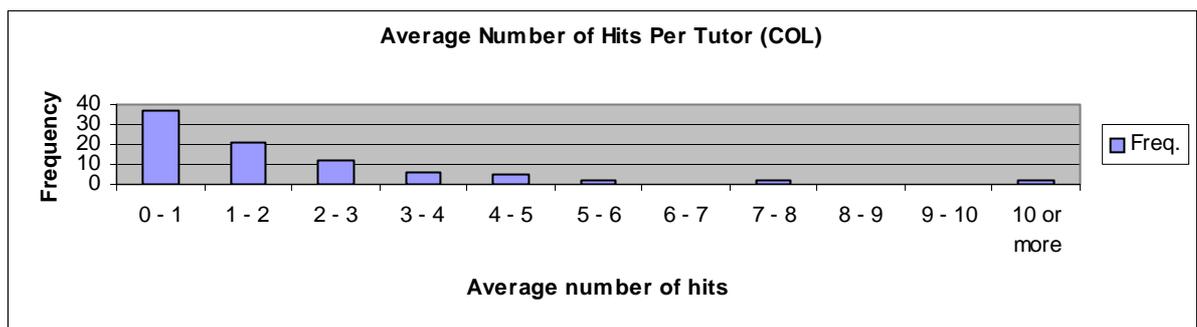
Fig. 1: **Participation Behavioral Pattern of Tutors for Learning Skills for ODL (COL course)**
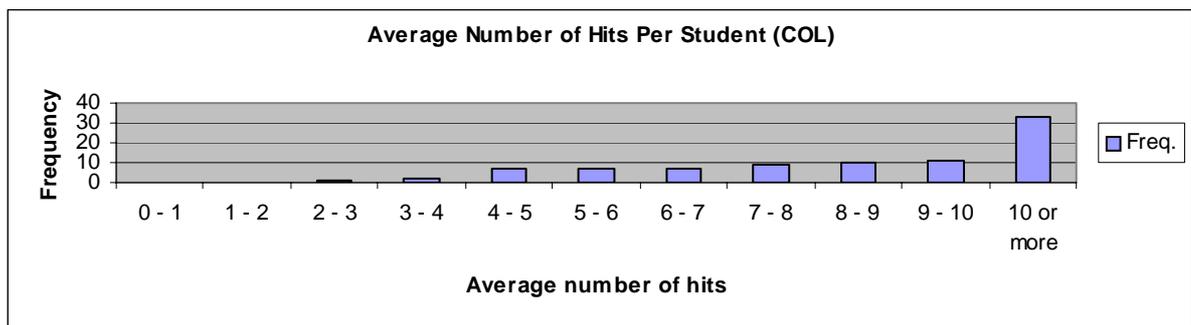
Fig. 2: **Participation Behavioral Pattern of Students for Learning Skills for ODL (COL course)**

b. Comparing Average Hits/Tutor and Average Hits/Student for non-COL course:

i. Management of Mathematics Course:

The data collected from this subject involved the participation of 27 tutors and 676 learners. A total of 4,549 hits were captured with 30.6% or 1,390 hits made by tutors. Figure 3 and 4 represent the frequency distribution of the participation behavioral pattern of tutors and students respectively for this course.
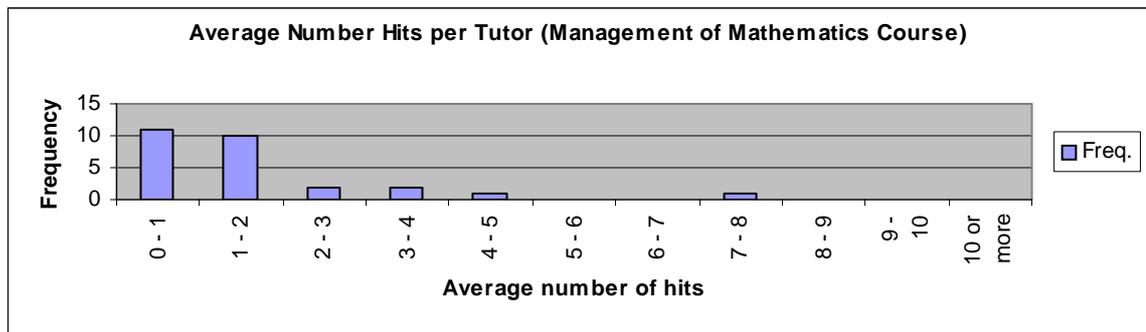
Fig. 3: Participation Behavioral Pattern of Tutors for Management of Mathematics Course
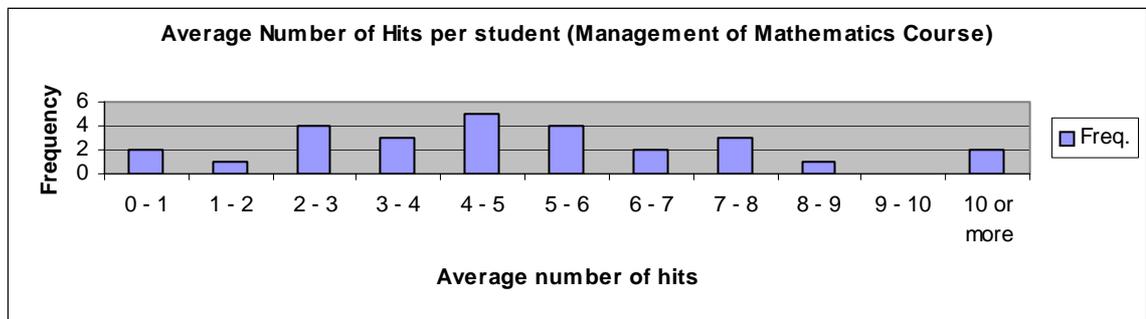
Fig. 4: Participation Behavioral Pattern of Students for Management of Mathematics Course

ii. Strategic Management Course:

The data collected from this subject involved the participation of 16 tutors and 264 learners. A total of 2,226 hits were captured with 42.1% or 937 hits made by tutors. Figure 5 and 6 represent the frequency distribution of the participation behavioral pattern of tutors and students respectively for this course.

Average Number of Hits per Tutor (Strategic Management Course)
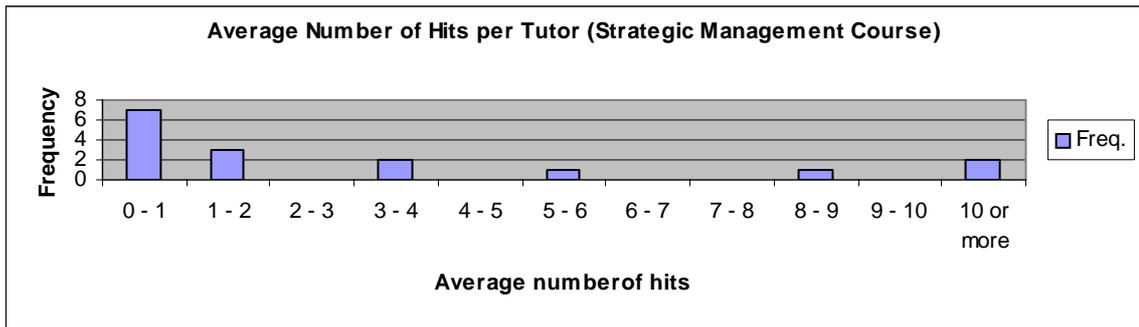
Fig. 5: Participation Behavioral Pattern of Tutors for Strategic Management Course

Average Number of Hits per Student (Strategic Management Course)
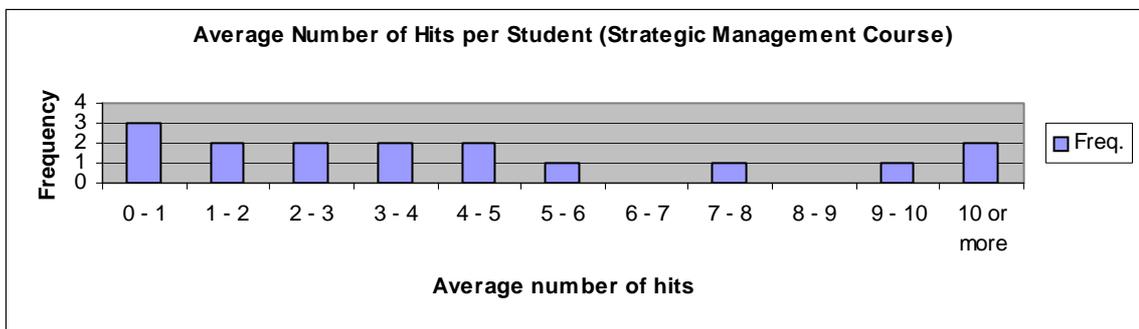
Fig. 6: Participation Behavioral Pattern of Students for Strategic Management Course

iii. Human Resources Development Course:

The data collected from this subject involved the participation of 5 tutors and 138 learners. A total of 1,310 hits were captured with 22.9% or 300 hits made by tutors. Figure 7 and 8 represent the frequency distribution of the participation behavioral pattern of tutors and students respectively for this course.

Average Number of Hits per Tutor (Human Resources Development Course)
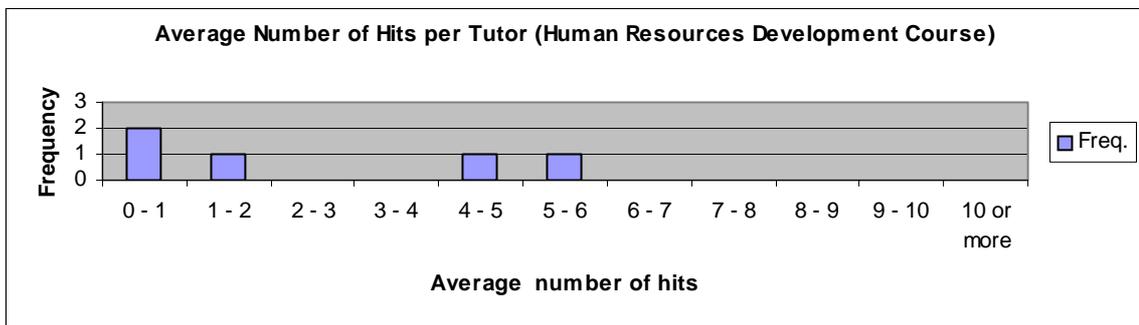
Fig. 7: Participation Behavioral Pattern of Tutors for Human Resources Development Course

Average Number of Hits per Student (Human Resources Development Course)
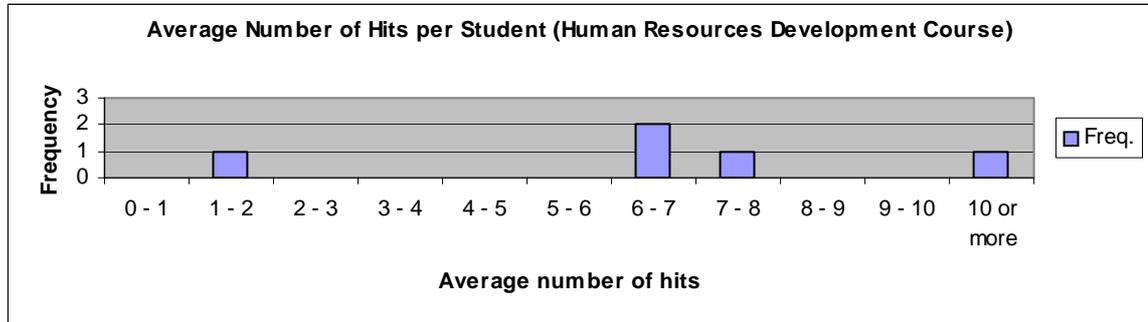
Fig. 8: Participation Behavioral Pattern of Students for Human Resources Development Course

c. Comparing average hits between COL and non-COL courses:

i. Average number of hits per Tutor (COL and non-COL courses):

Average Number of Hits per Tutor	
Course	**Ave Hits**
Learning Skills for ODL (COL)	2.1
Management of Mathematics (Non-COL)	2.1
Strategic Management (Non-COL)	3.5
Human Resources Development (Non-COL)	2.2

Table: 2

Table 2 shows the average number of hits per tutor for COL and non-COL courses. Note that there is no significant difference between COL and non-COL courses.

ii. Average number of hits per Student (COL and non-COL courses):

Table 3 shows the average number of hits per student for COL and non-COL courses. Note that there is the average hits are higher for COL course compared with non-COL courses.

Average Number of Hits per Student	
Subject	**Ave Hits**
Learning Skills for ODL	9
Management of Mathematics	6.7
Strategic Management	4.9
Human Resources Development	7.3

Table: 3

d. Comparing Tutor-Student Hits Ratio between COL and non-COL courses:

The COL course has a much lower Tutor-Student hits ratio as shown in Table 4 below.

Tutor-Student Hits Ratio			
Subject	Tutor's Hits	Student's Hits	Ratio
Learning Skills for ODL	8551	34797	0.25
Management of Mathematics	1390	3159	0.44
Strategic Management	937	1289	0.73
Human Resources Development	300	1010	0.30

Table: 4

e. Comparing Student's Participation Rate between COL and non-COL courses:

Table 5 shows the percentage participation in the online forum for COL and non-COL courses. Note that the participation rate for COL course is higher at 83.6%.

Average Student's Participation Rate	
Subject	Percentage
Learning Skills for ODL	83.6
Management of Mathematics	69.7
Strategic Management	62.1
Human Resources Development	73.9

Table: 5

CONCLUSION

Generally the introduction of COL has increased the participation of students in the online discussion forum from 64% (Abtar Kaur, 2004) to 83.6%. The average hits made by students are also higher. COL course captured an average of nine hits per student compared with non-COL courses ranging from four to seven. The percentage of students with average hits above nine is 88.5% (from Table 1). There is a clear trend in the participation behavioral pattern of students in the COL course (Fig. 2) as compared with non-COL courses (Fig. 4, 6 & 8). Hence, the COL has been successful in getting higher participation from students.

However, there is no significant difference in the average number of hits per tutor between COL and non-COL subjects (Table 2). The ratio of participation rate of tutor-student for COL course is 1 to 4 as compared to 1 to 2.3 for Management of Mathematics, 1 to 1.4 for Strategic Management and 1 to 3.3 for Human Resources

Development courses. What it means is that with COL, online tutors can play a more effective role as a facilitator and moderator because guided COL empowers students to respond to their peers as well instead of the normal 'I ask, you answer' type of response.

The findings of the research above are significant for online learning providers to get their learners engaged in learning. Engaged learners learns more effectively. Engaged learners feel a sense of belonging and that they are not alone as they now see they are part of the online community. COL does not necessarily require powerful hardware or software. You need human touch to guide learners and trigger discussion and provoke participation.

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CONTRIBUTION OF MULTIMEDIA COURSEWARE TOWARDS LEARNING IN OPEN DISTANCE LEARNING

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ABSTRACT

The use of interactive multimedia has been acknowledged as being able to help overcome some of the shortcomings in curriculum delivery. In Open Distance Learning institutions, where learners typically study in isolation and have reduced opportunities for direct instruction, interactive multimedia courseware appears to present itself as a useful method for instructing learners on topics which may be challenging otherwise. This paper highlights the use of an interactive multimedia courseware that had been specifically developed to teach a science course on basic techniques and laboratory safety at the Open University Malaysia (OUM). It also includes feedback from a pilot study designed to evaluate the effectiveness of the courseware. Conducted at the end of the semester, the feedback was obtained from three groups of learners. The questionnaire used was designed to collect feedback from learners on their understanding of the subject matter. The learners were asked to respond to the following aspects of the courseware: objectives, content and presentation; screen design, visual and technical elements, virtual lab content, and perceived added value. The learners responded to items based on a five-point Likert scale. Much has been learned from the pilot study. It was found that the usage of the multimedia courseware had helped learners achieve the learning outcomes and it is recommended that future learners be encouraged to use it.

INTRODUCTION

Providers of distance education today have to grapple with the challenges of structuring an education system that can meet the present and future demands of society. (Ford, 1996). In conjunction with this, Open and Distance Learning (ODL) providers have leveraged on technology to gain acceptance and recognition as an innovative and effective delivery mode of learning. Technologies can be used in various ways to facilitate learning in an ODL setting and have become indispensable in enhancing students ability to learn, communicate and understand. They also have the potential to transform students to become active learners, rather than as passive end users of unpalatable textbook knowledge. Furthermore, education technologies are invaluable in demystifying key concepts; the visual representation helps clarify concepts that might otherwise be unclear to the learner. As a result, students acquire vital process skills and deepen their understanding and appreciation of science.

As the use of technology becomes ever more pervasive and widespread, it is expected that multimedia courseware will become an important educational tool for ODL providers. One advantage of using multimedia technology is that it can offset the potential decline in the quality of education brought about by the increase in student population without a commensurate increase in the number and quality of teaching staff (Rahman, Tsoi and Dettrick , 1996).

An awesome variety of images and interactive visualizations are possible using multimedia. Consequently, multimedia could be a more engaging medium in communicating information more accurately to a student. An engaged student feels as though he or she is part of the learning process and is more likely to be intrinsically motivated. Allowing learners to navigate freely through the rich multimedia content enables a degree of self-learning and control. To this end, research has also shown that engagement increases when a learners feels that they have a sense of control over their own learning (Alderman, 1999). It is thus useful to determine what contribution this can have on learning in an ODL setting. In this regard, this study had sought to find out whether the use of a multimedia courseware has been effective in terms of having enabled the learner to understand the content better. The study also sought to determine on how this experience has added value to his learning.

BACKGROUND AND RATIONALE FOR THE STUDY

The Open University Malaysia is an open distance learning institution with an enrolment over 63,000 learners spread over 61 learning centres throughout the nation. Almost half of its learner population are teachers who remain in their jobs and attend OUM part-time. Their studies are funded by the government as part of the its effort to increase the number of graduate teachers in school. Among the programmes they are enrolled in is the Bachelor of Education (Science) degree program offered by the Faculty of Science. One of the courses that is compulsory is the course on Basic Techniques and Laboratory Safety. The students comprise government primary school and lower secondary school teachers who are distributed throughout the country.

OUM adopts a blended learning approach to suit the needs of its Open and Distance Learners. The blended learning approach in OUM encompasses five face-to-face tutorial sessions, self-managed learning and e-learning or online learning learning that is facilitated by the Learning Management System (LMS). The online learning component largely requires learners to go into online forums for discussions with each other and with the tutor on pre-determined topics. There is also a take home assignment and two tests conducted during the tutorial sessions and one final exam conducted under strict supervision.

For the course on Basic Techniques and Laboratory Safety, the learner is provided with a print module prepared by subject matter experts attached to various public universities in Malaysia, based on the curriculum approved by the local accreditation body. There is no mandatory laboratory component for this course. Since there was also no provision for a "hands-on" laboratory practical sessions for students to strengthen their understanding on

what they had read on the module, it was decided that a multimedia courseware would be the best substitute.
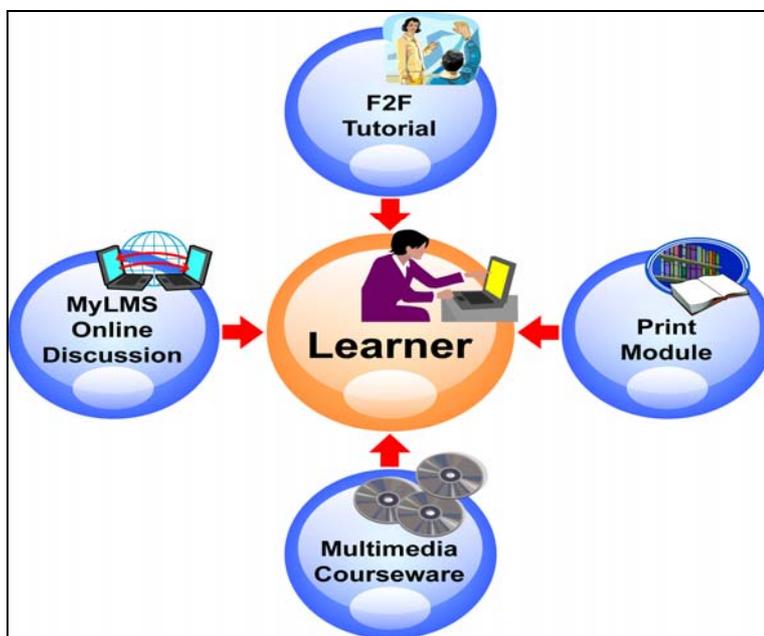
**Figure 1. The blend of learning materials provided
for Basic Techniques and Laboratory Safety**

Following discussions with subject matter experts, three topics from the print module were selected for multimedia delivery that would be interactive enough to help students learn the topic. Developed by the Centre for Instructional Design and Technology, the courseware would integrate ODL pedagogy practices at OUM and multimedia technology. It was also felt that the use of a multimedia courseware that is rich in graphics, sound, video and animation would help students visualize and understand concepts and practices in laboratory activities, titration and sterilization. The possibility of creating a new level of interactive learning experience to enhance learners' understanding of the content and engaging the learners to practice laboratory activity virtually was also there. The exposure to multimedia can also be advantageous as it would allow learners to navigate freely through the content and enable self-learning anywhere anytime.

It was also noted that adult learners tend to learn concepts differently. Hence, there is a need to develop learning opportunities that can cater for different learning styles. This can be accomplished using multimedia courseware as it has the ability to cross over all students' learning styles and make learning fun (Michelle, Lamancusa, Engel, Jorgensen, Velez, 1997). It should also be noted that in any open and distance learning environment, students have limited face-to-face contact with their tutors. This can be offset by developing courseware that supplements the print-based module to satisfy the learning needs and expectations of students. The courseware consists of three lessons: (a) Safety Procedures in the Laboratory: Chemistry, Biology & Physics; (b) Basic Techniques in

Chemistry: Titration Techniques; and (c) Basic Techniques in Sterilisation. The lessons were designed to be learner-friendly so as to help them learn each of the identified topics. By the end of each lesson, learners were expected be able to identify: (a) the importance of adhering to guidelines on laboratory procedures; (b) the steps involved in titration techniques; and (c) the techniques involved sterilisation. The screen captures of various sections of the courseware are provided in Figures 2 through 6.
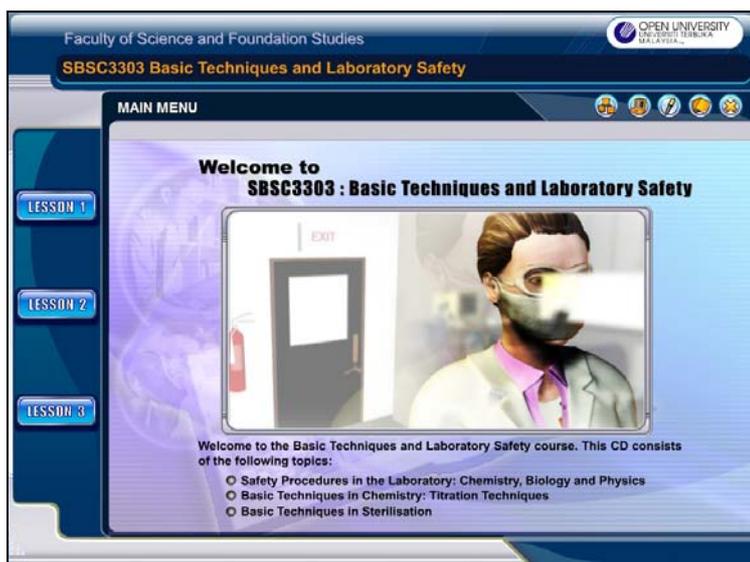
Figure 2. The Welcoming Screen
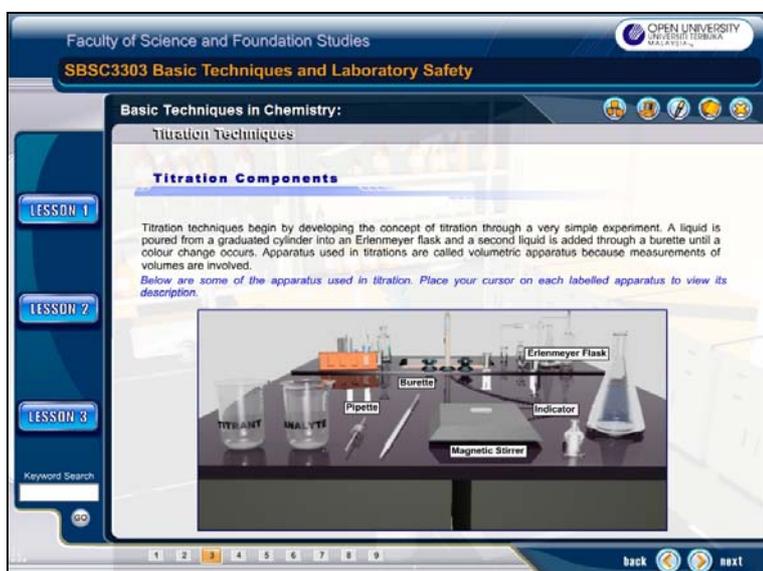
Figure 3. Sample of Content Screen
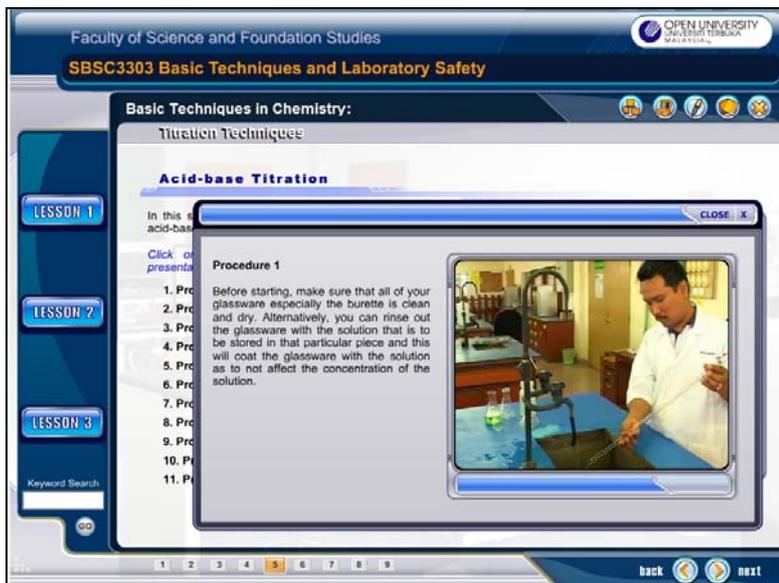
Figure 4. Sample of Content Screen
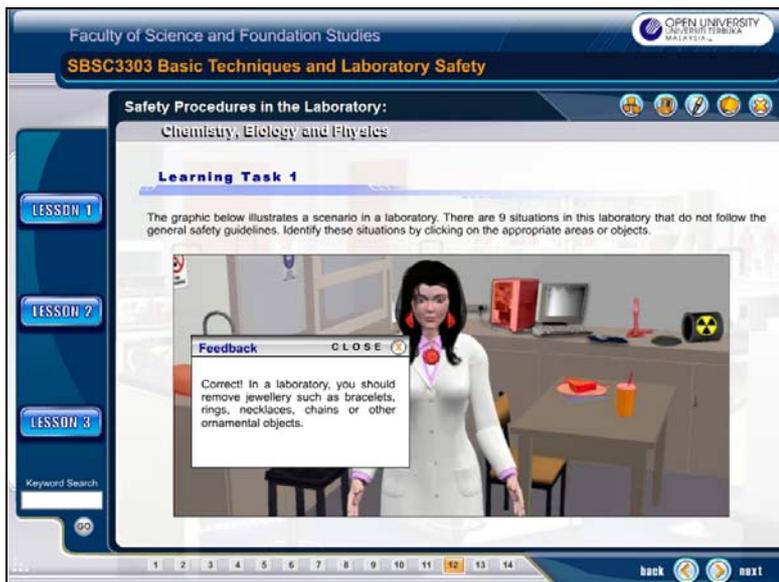
Figure 5. Sample of Learning Task
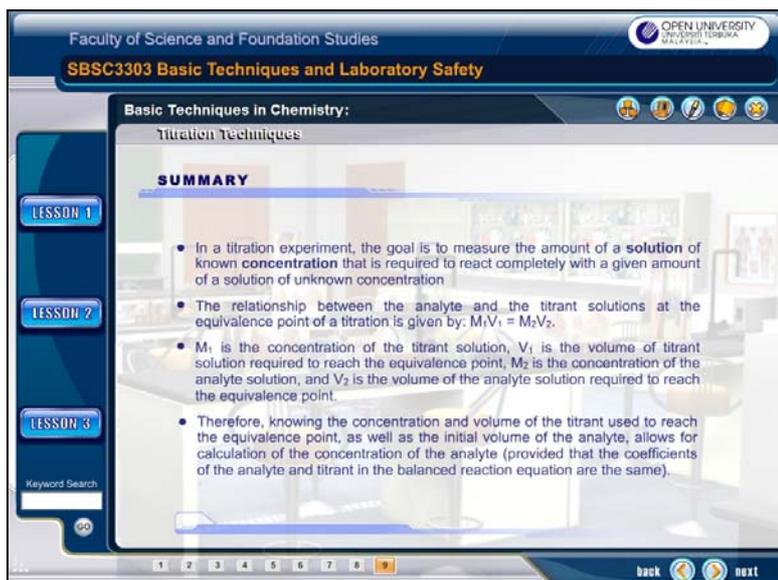
Figure 6. The Summary Screen

THE STUDY

The main purpose of this study was to determine the effectiveness of the multimedia courseware developed as a supplement to the print module. This study was conducted with three groups of learners to determine whether the developed courseware helped students understand the content of the course better. Also, the researchers sought to ascertain whether the graphics and simulations in the virtual laboratory had assisted in creating an interactive learning environment that was engaging for the learner. Besides, the study also sought to determine the learners' preference for the mode of learning (print module or courseware) and whether the students felt motivated to complete the courseware. Finally, the study sought to ascertain whether learners were able to achieve the learning outcomes set by the team who developed the courseware.

A courseware evaluation form was specially designed to get students feedback on the contribution of multimedia courseware towards their learning experience. Forty students from three learning centers responded to the survey. The forms were distributed to students who were enrolled in the May 2007 semester. The total enrolment for the course was 503 students. The evaluation form included statements to evaluate certain components such as objectives, content and presentation as well as the virtual lab content and to determine whether the courseware had brought added value. Out of 16 statements, 14 of them require the respondents to indicate their response according to the rating based on a Likert scale (see below):

1	2	3	4	5
Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**

One overall statement was for students to rate the courseware according to the rating below:

Very Poor	1	2	3	4	5	6	7	8	9	10	Excellent

The evaluation form also included one open-ended question asking for suggestions to improve the courseware. The findings are as shown in Tables 1 and 2.

FINDINGS AND DISCUSSIONS

Of the 40 respondents, 23.0% strongly agreed whilst another 58 percent agreed that the objectives provided in the courseware were clear. On whether the content presented in the courseware has met the courseware objectives, 81 percent indicated that they agreed or strongly agreed. A big majority at 72.5% agreed that it was clearly understood while only 12.5% agreed strongly with the rest remained neutral. Again, it could be said that a big portion of the respondents agreed that the content of the courseware was easily understood.

Eighty percent of the respondents agreed or strongly agreed that the simulations helped them to understand the content better. The majority again, that is, 72.5 percent of the respondents stated that the interactivity in the courseware allowed them to understand the content better.

From these findings, none of the respondent disagreed on any aspect of the content of the courseware, which further implies that the content delivered through this medium was widely accepted by the audience. They think that it was clearly explained, well organized and easily understood.

On the questions and feedback provided in the courseware, whether the questions were designed at different levels of difficulty, 52.5% agreed, and another 10% strongly agreed. The remaining 37.5% stayed neutral. A slightly different scenario could be observed regarding the number of questions with majority of them, at 42.5% prefer to stay neutral on whether the questions were sufficient for them to understand the content, with only 12.5% agreed strongly and 40.0% merely agreed on this. The remaining 5% disagreed on this assumption. The results implies that the questions in general were quite clear and designed at different difficulty levels but the numbers of question seems insufficient in understanding the content.

When asked about the ability of the courseware to meet the needs of a learner. The result shows that 52.5% of them agreed that the courseware was helpful while 17.5% strongly agreed on this, while the rest at 30.0 % stayed neutral and none disagreed. The high portion that agreed, at 70.0%, implies that in general the courseware met the needs of the learner.

Table 1: Responses to the Survey on SBSC3303 Courseware

No	Statements	Frequency				
		1 (Strongly Disagree) N (%)	2 (Disagree) N (%)	3 (Neutral) N (%)	4 (Agree) N (%)	5 (Strongly Agree) N (%)
1.	The objectives provided in the courseware were clearly defined.	0 0%	0 0%	8 20%	23 58%	9 23%
2.	The content presented in the courseware has met the course objectives.	0 0%	0 0%	8 20%	23 58%	9 23%
3.	The content was easily understood.	0 0%	0 0%	6 15%	29 72.5%	5 12.5%
4.	The simulations helped me to understand the content better	0 0%	0 0%	8 20%	23 57.5%	9 22.5%
5.	The interactivity in the courseware allowed me to understand the content better.	0 0%	0 0%	11 27.5%	22 55%	7 17.5%
6.	The questions designed were at different levels of difficulty.	0 0%	0 0%	15 37.5%	21 52.5%	4 10%
7.	The feedback to my responses was helpful.	0 0%	0 0%	11 27.5%	22 55%	7 17.5%
8.	The number of questions was sufficient for me to understand the content.	0 0%	2 5%	17 42.5%	16 40%	5 12.5%
9.	The courseware met my needs as a learner.	0 0%	0 0%	12 30%	21 52.5%	7 17.5%
10.	The graphics helped me to better understand the content.	0 0%	0 0%	11 27.5%	21 52.5%	8 20%
11.	The graphics/simulations/3D animations presented in the virtual lab helped me to understand how to conduct an experiment virtually.	0 0%	1 2.5%	13 32.5%	22 55%	4 10%
12.	The virtual lab helped me to visualize the real experiment in the lab.	0 0%	0 0%	12 30%	21 2.5%	7 17.5%
13.	I preferred to learn from the courseware rather than read the print module.	0 0%	2 5%	11 27.5%	22 55%	5 12.5%
14.	I felt motivated to complete the courseware.	0 0%	0 0%	11 27.5%	22 55%	7 17.5%

The final part of this analysis is on the added value of the courseware in learning the topic. Though a small minority, at only 5.0% disagreed, more than half of them, at 55.0% agreed that they preferred to learn from the courseware rather than read the printed modules. Another 12.5% agreed strongly on this with 27.5% of them on neutral ground. Next, when asked whether they felt motivated to complete the courseware, a total of 55.0% of the respondents agreed and 17.5% strongly agreed. The remaining 27.5% preferred to stay neutral. None disagreed.

This analysis covers the results obtained from a construct that judges the delivery and the learning of the multimedia courseware. Overall, as indicated by Table 2, 30% of the respondents gave a rating of above average to the courseware and 62.5% rated towards excellent. None commented negatively on the courseware. When asked for suggestion on how to improve the courseware, respondents suggested that more questions be added and that similar courseware should be developed for other OUM courses. One respondent suggested that the content pages of the courseware be printed for them. Another respondent praised OUM's effort to develop the courseware. From these remarks, it can be seen that learners found the courseware useful and were suggesting that OUM enhances the courseware to make it even more learner-friendly so as to assist them with the understanding of the subject matter.

Table 2: Overall Rating of the SBSC3303 Courseware

	1 Very Poor	2	3	4	5	6	7	8	9	10 Excellent
N	0	0	1	0	2	5	7	20	4	1
%	0%	0%	2.5%	0%	5%	12.5%	17.5%	50%	10%	2.5%

CONCLUSION AND RECOMMENDATIONS

There is little doubt about the advantages of using multimedia technologies in assisting educators to achieve educational effectiveness. These technologies have been adopted and have succeeded in generating better interactivity between the learner and the content. The contribution of an in-house designed and developed multimedia courseware for the Basic Techniques and Laboratory Safety course had been overwhelmingly positive. The results indicate that in general, almost two-thirds of the respondents believed that the courseware was a good supplementary learning material to support the content of the print module. Most interesting was the finding that the learners also felt highly motivated to complete it. It appears that the flexible learning approach through multimedia will improve the teaching time, method and the quality of learning. In trying to provide an optimized learning experience, OUM has formulated a blended learning pedagogy to support the delivery of a science course to students around. The blend is expected to enable OUM to leverage on technology to better cope with its rapid growth in the number of students located in 61 learning centres.

In conclusion the survey shows that incorporating multimedia technology in a virtual world with undisputable quality learning content will achieve the learning outcomes appropriate to the specific needs of the open and distance learners. It is recommended that in the future, a similar study is conducted on a bigger scale involving a larger number of respondents. It would also be interesting to see where there is a difference between students with different demographic variables such as age, gender and location when determining the effectiveness of the courseware in helping learners to achieve the learning outcomes. For the next semester the course is offered, the researchers recommend that the learners in future utilize the complimentary CD to the fullest as it can be expected that the majority will benefit from it

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FEEDBACK AS A MECHANISM FOR TEACHING AND LEARNING

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ABSTRACT

Giving feedback to students promotes learning. Providing feedback will also help students to find the right path towards enhancing their performance. Feedback can be given in many forms but what value the feedback provides to the students is essential in enhancing the students' learning and the effect it has on students is an indicator to educators on how effective our teaching methods are. The aim of feedback is to enable room for improvement and thus the feedback we give our students should be able to initiate this improvement.

Hence, our research questions are as follows:
1. What sort of feedback provides a better mechanism for learning?
2. How do students react to different feedback?
3. How does students' feedback provide educators with a clear indicator on the effectiveness of teaching methods?

A quantitative study on a sample of 100 students and 50 lecturers will be used. A questionnaire probing the students' understanding on the feedback and their possible reaction is to be evaluated. The questionnaire distributed to the lecturers is intended to evaluate if students' feedback provide an indicator to educators to respond and change to students' needs. It will look into the educator's perception and course of action towards enhancing and improving their teaching methods. The results and findings from this research will be used to provide recommendations for better and effective usage of feedback as a teaching and learning mechanism.

BACKGROUND OF STUDY

There are numerous papers on how student evaluation provides educators feedback to assess their teaching methods. However, very few have looked into methods of providing valuable feedback to students as a mechanism for improving student's performance. Feedback should be given in a manner that enhances performance instead of damaging their self-esteem.

Rowland (1999) draws the concept of "feedback" using the metaphor of a biology cell. "The way a cell develops in response to its environment" reflects the way a feedback contributes towards promoting the development of students. Students want to know their score and the feedback provides an opportunity for students to learn from their assessment. As such providing students with valuable feedback would enable them to learn from their assessment.

Very often instructors fail to see the effect of their feedback on their students. Some feedback enhances learning and some feedback damage the spirit of learning. There is even some feedback that does not provide adequate room for students to improve because the feedback does not seem to provide any value because of lack of information.

In the same article, Rowland (1999) contrasts the use of feedback by a control engineer as a control mechanism. This metaphor illustrates how instructors could use the feedback provided to students as an indicator to evaluate the effectiveness of their teaching methods. The process of providing feedback to students indirectly provides instructors with valuable information on students' ability to comprehend lectures, tutorials and also the effectiveness of teaching methods used in class. The feedback as such becomes a control mechanism in improving teaching methods.

As such, in this paper, we intend to identify the following:
4. What sort of feedback provides a better mechanism for learning?
5. How do students react to different feedback?
6. How does students' feedback provide educators with a clear indicator on the effectiveness of teaching methods?

LITERATURE REVIEW

Rushton (2005) asserts that information is only feedback if used to alter the gap between actual and desired levels of information. This shows the importance of formative feedback in higher learning.

Hindrances to effective feedback
There are many stumbling blocks preventing the effective communication of feedback in assignments to students. Studies have found that the major problem is the heavy emphasis on extrinsic motivation such as grades and not personal knowledge enhancement (Carless, 2006; Ecclestone, 1998; cited by Higgins et al., 2001; Ding, 1998; Miller et al., 1998; cited by Higgins et al., 2001). These studies find that students tend to only look at their marks and disregard written feedback, which leads to surface learning and not deep learning. This may be attributed to facts such as consumerism and the structure of the university assessment system which mediate students' responsiveness to feedback (Ding, 1998; Miller et al., 1998; cited by Higgins et al., 2001). However, Higgins et al. (2001, 2002) argue that students are conscientious customers, enthusiastic about gaining knowledge and not just obtaining high marks. It is the method of communicating the feedback that has to be enhanced in order to facilitate learning.

With reference to the discussion above, Carless (2006) stresses that there is a gap in the perceptions of students and tutors on the attitude of students towards grade and learning, fairness of marks and the type of feedback considered effective. Many students also have this misconception that if they have invested a lot on an assignment they deserve high marks whereas lecturers may have just marked based on the marking scheme. It is also found that tutors seem to view their feedback more positively than students. Furthermore, tutors may view oral comments as feedback but students may not recognise this form as much as written feedback. Tutors on the other hand, may feel that it is baseless to give

lengthy written feedback especially when there is a perception that students may not read the comments. The fact that students may require a lengthy feedback too is because of the notion of consumerism (Higgins et al., 2002) and also because many are insensitive towards the workload of tutors.

With the emphasis on grades, emotions ride high especially when the feedback is negative in nature. Sometimes students who perform badly do not bother to collect their marks, blame the tutors, feel that the marking is unfair and feel depressed (Carless, 2006). Students who do well on the other hand may attempt to duplicate a similar assignment elsewhere (Carless, 2006). Where there are multiple tutors, students may also attempt to get into classes in which tutors are more lenient in their marking (Carless, 2006).

Types of effective feedback

The above reasons point to the fact that feedback has to be communicated effectively. This draws attention to whether the act of giving grades is pertinent to success. Studies have found that grades may have a negative effect on the self-esteem of students and it may encourage competition instead of self development (Black et al., 2004; Carless, 2006). Higgins et al. (2001) suggest that grades should be followed by comments. All these studies however suggest disengaging grades from comments, by first giving the comments and then the grades. This is because when grades are given together with the comments, there is a tendency for students to disregard the comments.

Comments given however should have characteristics that encourage students to read it. Higgins et al. (2001) stress that comments should not be too general and brief. Bryne (1997) confers to this and adds that brief comments should only be given for minor errors such as spelling and grammar. Feedback comments should also not be too specific to the assignment. Higgins et al.(2001), Carless (2006) and Black et al. (2004) all suggest that comments should correct mistakes, advice on how to improve, explain mistakes focusing on the level of argument and critical analysis. In other words, comments should encourage deep thinking and not surface level knowledge. A comment should help students to tease out assumptions and help them to be critical about the quality of arguments.

It is also recommended that other than oral comments, comments should also be given in written format (Bryne, 1997; Carless, 2006; Black et al., 2004). Also, it should be ensured that the tone is clear, concise, readable and structured. Negative comments should be changed into supportive comments (Bryne, 1997). This is because as students are reluctant to receive bad news, lecturers should make the comments easy to read. The language of assessment in feedback and study should also be the same and easily understood (Higgins et al., 2001; Carless, 2006).

Both written and oral feedback can be given as a group feedback to save students and lecturers time. Group feedback is also not damaging emotionally as it is not directed to an individual (Bryne, 1997). Supportive comments should be given even when students perform badly (Stiggins and Chappuis, 2005).

Higgins et al. (2001) suggests a good student-tutor relationship for better communication of feedback. A dialogue on just discussing the assessment should be held. The dialogue can explain to students on how to receive feedback with openness, explain the assessment

criteria, remind students that grades are only based on those criteria and not other factors, and explain how students and tutors can utilise the comments (Duhon et al., 2006; Carless, 2006).

It is pertinent that the assessment criteria are clearly defined to students and students know how to relate feedback to assessment criteria (Higgins et al., 2001; Carless, 2006). To understand the criteria better, students can be given anonymous strong and weak samples to correct according to the criteria (Stiggins and Chappuis, 2005). There can also be peer assessment followed by tutor's assessment. Students can either be in groups or in pairs (Bloxham and West, 2004; Black et al. 2004). Elwood and Klenowski (2002) have outlined activities on how to 'unpack' the meaning of assessment criteria on a master's module. Peer assessment is not commonly practised and Black (2004) mentions that it can only be put into practice if lecturers have the courage to change.

Listing of marks
Carless (2006) finds that students don't want others to know their marks whether high or low. However, Downey and Taylor (2001) exert that it is impertinent that students know their standing in class. It is suggested therefore that an anonymous student mark list is viewed by students.

Gender and Teaching experience on feedback
Where emotions are of concern, gender differences were detected by Read et al. (2005) whereby female students exhibit less self confidence in their ability. Gender differences were also present in the way tutors presented the feedback and the content of feedback. Male tutors were less hesitant about giving negative feedback whereby female tutors stressed more on the importance of giving supportive feedback.

It is found that teaching experience has an influence on feedback in that teacher's with more experience would have developed an "automaticity" (Chi et al., 1988; cited in Rushton, 2005) in key aspects of practice and therefore are able to invest in more time in providing feedback to students. Fox-Turnbull (2006) reinforces the fact that teacher's experience and knowledge has a great impact on the quality of feedback given.

Due to the tutor-student gap (Carless, 2006) and as identified by Rushton (2005) on the two key components of feedback which are teachers providing feedback and students receiving feedback, this study too attempts to identify the different views of lecturers and students on the value of different types of feedback. An attempt is also made to determine how lecturers incorporate the feedback into their teaching and the reaction of students towards negative and positive feedback. Differences in terms of gender, course and teaching experience is also examined.

METHODOLOGY

Sample
A quantitative study on a sample of 171 students and 57 lecturers was obtained from a private higher learning institution. The tables below present the division of the sample of respondents according to their field of study.

Table 1: Sample of Students by Field Of Study

	Business Administration		Marketing		Accounting		Finance	
Student	32	18.7%	54	31.6%	39	22.8%	46	26.9%

Table 2: Sample of Lecturers By Field Of Study

	Business Administration		Marketing		Accounting		Finance		Economics		Law	
Lecturer	14	24.6%	10	17.5%	15	26.3%	8	14.0%	4	7.0%	6	10.5%

The survey was conducted to investigate the following concerns on an assignment:
1. the value of feedback on assignments
2. students' reaction towards feedback
3. treatment of lecturers towards feedback
3. preferred method of receiving and providing feedback

Students' Questionnaire
The questionnaire for students was structured into 3 sections: 1) Value of feedback; 2) Reaction towards feedback and 3) Method of receiving feedback. The respondents' gender and field of study were also noted.

A 5-point scale with 5 statements was used to measure the value of feedback. A higher value indicates a feedback perceived of high value for students to learn and improve. Respondents were also asked to state the most important and least important feedback.

As the aim of feedback is to provide room for positive development, hence students' reaction provides a good indicator as to whether feedback does motivate them to improve. This was measured on a 5-point scale with 8 statements. A higher value for any of the items would indicate that that the students tend to react more often in that particular manner.

The preferred method of receiving feedback shows how seriously students take feedback. The appropriate method will enhance their spirit of learning instead of damaging their self esteem. It was ascertained in which form students preferred receiving their results, whether as a class grade list or to be viewed individually.

Lecturers' Questionnaire
Questionnaires were provided to lecturers to evaluate if feedback could be used as a control mechanism to improve teaching methods. This questionnaire was structured into 3 parts: 1) Lecturer's background; 2) Types of feedback provided; 3) Treatment of feedback; and 4) Method of receiving feedback

The types of feedback provided were measured on a 5 point scale with 10 statements. A higher value is an indication that the feedback was provided more often by lecturers.

Lecturers were also asked to state the best feedback method in order for students to learn and improve.

Treatment of feedback by lecturers was measured on a 5-point scale with 5 statements. A higher value would indicate that lecturers are more likely to treat feedback in the particular manner.

FINDINGS

The findings of this research are presented below.

Students Perception on The Value of Feedback

Table 1: Students' Rating on The Value Of Feedback

	Mean	Median	Very High Value (%)	Very Low Value (%)
Grades	3.7	4.0	17.8	6.5
Brief comments	3.68	4.0	17.5	0.6
Lengthy comments	3.84	4.0	25.4	4.7
Feedback individually	4.06	4.0	39.8	0.6
Personalise comments in front of the whole class	2.53	3.0	4.1	19.6

Results are based on a 5 point Likert scale labelled:
1- Very Low Value, 2-Low Value, 3 – Moderate, 4 – High Value, 5 – Very High Value

Students find receiving feedback individually to be of highest value whereas the least preferred feedback is receiving personalised comments in front of the whole class.

The chi square tests show that the only significant relationship between programme and rating of feedback value can be observed for the rating of personalised comments in front of the whole class. Although the general consensus is that personalised comments about student's marks should not be made in front of the whole class, it can be observed from the table above that this is more prominent among accounting students. The Chi square value of 23.035 is significant at the 5% level.

Table 2: Proportion of Students Who Had Rated The Following Feedback Combination As Most Important

Type of Feedback	%
1) Individual feedback and a combination that includes individual feedback	55.4
2) Grades only (15.9%) and other combinations that include grades.	34.4
3) Lengthy comments only (12.7%) and combinations that include lengthy comments	30.5

Note: Only the highest three combinations are listed

Table 3: Proportion of Students Who Had Rated The Following Feedback Combination As Least Important

Type of Feedback	%
1) Personalised comment in front of the whole class and a combination including this method	60.3%
2) Brief comments only.	18.7%
3) Grades only	10.3%

It can be seen from tables 2 and 3 that the students feel the best type of feedback is a combination of including a grade, lengthy comments and individual feedback. The least preferred feedback is personalised comments in front of the whole class. Grades alone or brief comments alone too is not preferred. However, the Gamma value of 0.3 (sig. = 0.00) on the relationship between grades and brief comments indicates a moderate positive relationship between grades and brief comments. Based on this test and the results of the most important feedback, we can conclude that many students also seem to like the feedback combination of grades and brief comments.

Lecturers' Method of Administering Feedback

Table 4: Lecturer's Rating On How Often They Provide the Different Types Of Feedback

	Mean	Median	Very Often (%)	Never (%)
Grades only	2.96	3.0	13	14.8
Brief comments without grades	2.32	2.0	7.1	41.1
Lengthy comments without grades	2.26	2.0	1.8	38.2
Grades and brief comments	3.6	4.0	21.4	3.6
Grades and lengthy comments	3.12	3.0	8.9	5.4
Personally meet each student to give comments	2.98	3.0	10.5	12.3
Personally meet students who had performed badly to give comments	3.8	4.0	19.6	5.4
Give comments about each student in front of the whole class	1.48	1.0	1.8	73.7
Single out students who had done well and use them as an example to the whole class	3.02	3.0	10.5	8.8
Give general comments on the performance of the whole class	4.28	4.5	47.4	1.8

Results are based on a 5 point Likert scale labelled:
1- Never, 2- Rarely, 3 – Sometimes, 4 – Often, 5 – Very Often

Table 4 shows that the type of feedback most often practised by lecturers is to give general comments in front of the whole class (Median = 4.5). Often lecturers practise giving personal feedback but mainly to only students who had performed badly (Median = 4.0). It can be seen that grades alone is not a practice, but instead lecturers often provide grades with a brief comment on the performance of the students.

When a Kruskall Wallis test was conducted to obtain the mean difference between field of study and rating on feedback, the only significant difference that can be found is that more law lecturers seem to give feedback in terms of lengthy and brief comments without

any grades. However, since there are only 6 law lecturers out of 57 lecturers, this difference is probably not of practical significance.

Table 5: Proportion Of Lecturers Who Had Rated The Following Feedback Combination As Most Important

Type of Feedback	%
1) Grades, brief or lengthy comments together with other methods	57.6
2) Grades and personally meet students	36.9

Note: Only the highest two combinations are listed

When asked to state the most suitable method of feedback for grading assignments, most lecturers stated a combination of grades, comments and other methods. Of the 57.6%, quite a high proportion of lecturers had suggested a combination of just grades and brief comments to be the most suitable method.

Many lecturers had also suggested that after grading the students, it is recommended that the lecturers meet each student one by one to discuss the assignment. However, there are lecturers who had stated that although theoretically this would be the ideal feedback method, however, it is not practically viable due to the large class sizes. Hence, many had suggested that if the class size is too large, an alternative method is to meet the students who had performed badly or give general comments in front of the whole class on the performance of the students.

Reaction of Students towards Negative and Positive Feedback

Table 6: Student's Rating on How Often They React In the Following Manner Towards Negative Feedback

	Mean	Median	Very Often (%)	Never (%)
1) Be angry with the lecturer	2.33	2.0	0.6	18.1
2) Loose confidence	2.96	3.0	6.4	8.2
3) Do not take grades seriously	2.31	2.0	1.8	24.1
4) Just accept grades	3.07	3.0	8.3	8.9
5) Personally see lecturer for more explanation	2.66	3.00	6.5	14.7
6) Compare results with friends assignments to identify areas of improvement	3.32	3.0	14.1	4.7
7) Try to identify own areas of improvement	3.51	4.0	17.0	1.2
8) Share understanding of feedback with lecturers	2.75	3.0	7.6	9.9

Results are based on a 5 point Likert scale labelled:
1- Never, 2- Rarely, 3 – Sometimes, 4 – Often, 5 – Very Often

	Mean	Median
Reaction which shows no initiative on the part of the student in trying to improve (Average rating of questions (1), (2), (3) and (4))	2.67	2.75
Reaction which shows that students have taken an initiative to improve. (Average rating of questions (5), (6), (7) and (8))	3.06	3.00

Students do not seem to exhibit much negative reaction towards negative feedback such as to be angry with lecturers, to loose confidence and not to take their grades seriously. They may just have a slight problem of just accepting the grades without questioning the lecturer. Students seem to exhibit more positive reaction towards negative feedback received, especially in the sense that they seem to often take their own initiative to try to identify their mistakes and areas of improvement (median = 4) and they also often seem to compare their results with their friends to identify areas of improvement (mean = 3.32).

Table 7: Reaction of Students towards Negative Feedback by Programme

	X^2	Sig.	Post Hoc
Reaction which shows no initiative on the part of the student in trying to improve (Sum of questions (1), (2), (3) and (4))	13.951	0.003	Finance < Others
Reaction which shows that students have taken an initiative to improve.(Sum of (5), (6), (7) and (8))	5.888	0.117	-

The results of the Kruskall Wallis test and the Dunnett's T3 (Post Hoc) test above show that finance students exhibit the least negative reaction towards negative feedback compared to other fields of study. The main difference is observed in Accounting students compared to Finance students whereby the former seem to more frequently get angry with the lecturers when their results are not good. On the other extreme, Business Administration students compared to Finance students do not seem to take their assignment grades seriously.

Table 8: Student's Rating On How Often   They React In The Following Manner Towards Positive Feedback

	Mean	Median	Very Often (%)	Never (%)
1) Stop studying hard	1.98	2.0	1.2	38.8
2) Continue to study in the same way	3.86	4.0	25.3	1.2
3) Become motivated to study even harder	3.78	4.0	25.1	1.8

Table 8 shows that regardless of the field of study, when the results are good, most students demonstrate a positive reaction whereby about 25% of them respectively mentioned that they very often will continue to study in the same way and that they will become motivated to study harder.

Treatment of Feedback by Lecturers

Table 9: Lecturer's Rating On How Often They Treat Feedback In The Following Manner

	Mean	Median	Very Often (%)	Never (%)
1) Incorporate feedback into teaching	3.45	4.0	7.3	5.5
2) Allow students to view good past assignments	2.69	3.0	9.1	18.2
3) Allow students to view good and bad past assignments	2.35	2.00	3.6	25.5
4) Use the performance as an indicator of the effectiveness of the teaching	3.45	3.00	14.5	5.5
5) Change the teaching method when the students perform badly	3.69	4.00	14.5	3.6

It can be seen that most lecturers use the performance of the students as an indicator of their teaching and they often incorporate the feedback into their teaching method and also change their teaching method when the students perform badly. This seems to be a control mechanism employed by lecturers since not many of them allow students to view past assignments.

There is no significant difference by lecturer's field of study but in terms of gender it can be seen that more male lecturers allow the students to view good and bad past assignments compared to female lecturers.

Table 10: Method of Preference to List or Receive Results

	Method preferred by students (%)	Method preferred by lecturers (%)
1) to be viewed by only the student	63.5	44.4
2) to allow students to view the class grade list	34.7	37.1
3) Both	1.8	18.5

The results above show that although most students seem to prefer their results be viewed only by them (63.5%), quite a high proportion of lecturers like to list all students' grades (55.6%) in order for students to see their position in class.

CONCLUSION AND RECOMMENDATIONS

From the above findings we can conclude the following:

1. Both students and lecturer share similar opinion that a combination of grades and comments (preferably lengthy) provide the highest value to students to improve and develop.
2. Both students and lecturer have indicated that personalized comments individually for each student provides added value to students. However, some lecturers have indicated that this may be an ideal method but not practical if the class size is too big. Hence depending on the class size many lecturers opt to the simpler method of giving general comments and releasing results to allow students to view their position in class. Students on the other hand have clearly indicated that public knowledge of their position in class may be damaging to their self esteem.
3. Students showed positive reaction to positive feedback by wanting to continue and work harder on their studies. The negative feedback however, did draw some negative reaction from students. Some students exhibited anger towards their lecturer. Feedback hence evokes strong emotions and it is crucial that a proper method of giving feedback is used.
4. The process of providing feedback to students provides lecturers with a control mechanism to improve their teaching methods as they do modify and change teaching methods to meet the needs of different group of students.

As such, our recommendations in providing feedback for assignments to students are as follows:

1. Provide grades to show their position. However, since grades solely do not provide students with adequate information on how to improve, it should be combined with lengthy comments to enable students to know their mistakes or what is lacking in their assignment that may have deprived them of a good grade. On the other hand, the lengthy comments may also be positive to enforce the positive ability within the students to be able to meet the learning outcomes. It would give them confidence to enhance their ways of analysing or writing.
2. Preferably provide personalized comments to maintain the self esteem of students. It is advisable to refrain from providing general comments and public screening of results.

In addition to the above recommendations there are others that may be useful when considering feedback.

3. Encourage self and peer assessment, in which students can give themselves and each other feedback on their work.
4. Lecturers should be clear and realistic in giving comments and to avoid giving comments which are vague and too general.
5. Support and encourage students in their learning by starting and ending with positive comments. Combine helpful criticisms with suggestions for improvement.
6. Lecturers should also maintain proper teaching portfolio to record the feedback session that they have conducted with each student so as to monitor their performance.

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EXPLORING LIAISON: AN IVESTIGATION INTO ROLES OF RELATIONSHIP BUILDING AND MANAGEMENT BETWEEN ENGLISH TEACHING COLLEAGUES IN A THAI EDUCATIONAL INSTITUTION

Sureepong Phothongsunan

ABSTRACT

This case study aims to examine the roles of relationship building and leadership of eight managerial and non-managerial academic personnel in a language institute at a university in Thailand. The study finds that relationship building is seen as an important factor that could contribute to effective teamwork, resulting in supportive role interactions. Investigation into the team approach and methods of enhancing it reveal considerable rapport between the participants, including sharing and giving ideas, conducting both formal and informal meetings and maintaining good working relationships. It was found that although the participants were highly committed to working as a team, they tended not to do it formally. They also remarked that more relationship building could be promoted and that there is a need to reduce the gap between the management and the academic staff in main decision-making by involving every team level and creating a similar culture. The process of investigation is carried out through interviews and documentary evidence. By comparing these two methods, greater insights are offered. Implications from the study have paved the way for proposing improvement planning by focusing on building relationships and team training in order to sustainably develop shared goals and sufficiently facilitate team functioning.

INTRODUCTION

What makes for effective leadership has always been the author's interest spurred into action by considering one of the five core components of leadership: building relationships (Fullan, 2001). The specific research question is

What are the roles of relationship building and leadership of the staff members in a language institute at a university in Thailand?

It is widely accepted that developing good relationships is one of main attributes of leadership (Fullan, 2001). As an English teacher, the author realises the significance of improving teaching efficiency and effectiveness in relation to fruitful connections among teachers. McLaughlin and Talbert (2001) assert that strong teacher communities can be effective when teachers promote collaboration and make breakthroughs in learning. In addition, it is the role of the leader to ensure that the organisation develops relationships that help foster desirable outcomes.

Based on the author's view, among small groups of teachers who teach similar subjects, fine teachers are to help each other, share teaching materials, conduct small meetings periodically to discuss encountered problems, and decide on what learning activities to be used in the classroom. Although these practices may be enforced as the general policy in Thai schools and universities, it is noticed that a number of teachers hardly spend time implementing them, probably as they might not see the importance of doing so. Some may tend to value isolation and competitiveness. This is in line with what Peterson (1995) confirms that in many schools, teachers work in isolation, and administrators try to accomplish tasks alone and thus responsibility of implementing new ideas falls to individuals.

Although working together in team often appears to be a more effective way to accomplish important tasks, as a teacher and observer only in one context, the author is quite limited in terms of being aware of how other learning communities foster relationship building. Therefore, investigating the other educational institute similar to the author's setting and context to understand the role of leadership and how relationships are promoted seemed desirable. It was decided to look into a language institute in Thailand where the research emphasis was placed on its management and academic staff.

Research into leadership is important. Once the behavior of leaders and the resulting performance and satisfaction of followers are reported, others may benefit as it may serve as a case study or a model of leadership. The author is well aware that the leadership style that works in one context may not necessarily be applicable to another. However, results of research in one context to another similar context have important possibilities. In this case, results may turn into important proposals for perking up effective leadership and management.

LITERATURE REVIEW

A background to leadership theory

Researchers have examined leadership skills from a variety of perspectives. Early analyses of leadership theories: trait, behavioral and contingency indicated that they did not seem to offer a satisfactory explanation of differences in leadership at various organisational levels and of leader - follower influences on leadership. This links to the emergence of the subsequent New Leadership theories (Middlehurst, 1993).

The New Leadership
Charismatic Leadership Theory
In the late 1960s, the charismatic leadership theory occurred, stating that a person of common birth can become a powerful leader by developing motivational skills. The charismatic approach comes with some drawbacks. For the successful charismatic leader, it would be easy to get into being exploitative and totalitarian

since the leader controls all the power. For followers, they can be misguided by illusion of leadership and lose balance and perspective.

Transactional leadership
The transactional leadership approach is based on a social exchange approach in which the provision of benefits such as prestige and wages is offered by the leader to attain follower compliance. The key motivator in transactional leadership has been said to be self-interest, as status or pay is substituted for work effort.

Transformational leadership
In contrast to transactional leadership, transformational leadership aims to build on people's unselfish motivations and personal intentions to succeed in greater things. Transformational leaders are individuals that appeal to higher ideals and moral values such as justice and equality and can be found at various levels of an organisation.

Cultural and symbolic leadership
Cultural and symbolic leadership approaches argue that leadership does not exist, but is part of the dynamic process of making sense and creating meaning that is involved in by members in an organisation. As a result, leadership can only be understood by those who share the meanings or culture. The emphasis, however, is very much placed on the role of leaders.

Cognitive leadership
Similar to cultural and symbolic approaches, cognitive approaches to leadership underscore the ways that meaning is created in the social context of workplaces through the interactions of their members. Nonetheless, the greater emphasis is laid on the ways in which individuals construct reality rather than on the nature of their reality (Middlehurst, 1993).

There is always a need for effective leadership. The literature indicates a clear progression from static to dynamic considerations. The newer leadership has paved the way for vision, collaboration and change as important characteristics of leadership.

Leadership and Change
As society becomes more complex, leadership gets even more sophisticated. This complexity is tantamount to unforeseeable, indirect change. Therefore, leadership and management in a culture of change requires leaders who are able to operate under complex, uncertain situations (Fullan, 2001). Bringing us closer to face problems for which there are no simple solutions, leadership in a time of change is not about stimulating others to solve problems. Rather, it is to help them confront problems that they have never addressed before (Heifetz, 1994). According to Fullan, five components of leadership embody intensifying drives for positive change. They include moral purpose, understanding change, building relationships, knowledge building and coherence making

Relationship Building

The ingredient common to all change is relationships, the key factor in this research study. Indeed, this study aims to show that relationships are an important part of good organisations and leadership. Collaborative cultures, which have close relationships by definition, are powerful. Thus, the role of the leader is to ensure that the organisation develops relationships that help produce desirable results. Building relationships among diverse elements in the organisation, including those who resist agreeing, is essential. In both business and school, Lewin and Regine (2000) assert that interactions, or relationships, among its agents are the key principle. A number of research studies foster the merits of relationship building in organisations. For example, Woods's (1994) work has indicated that when leaders involve staff and others in planning implementation strategies and set and enforce expectations for participation, staff's internal commitments dramatically increase with determination and consistency.

Studies of successful collaborative partnerships have revealed the factors contributing to building effective relationship and those that do not. A recognised barrier to successful collaboration is lack of time (Bishop and Larimer, 1999). Hence, having flexible schedules and scheduling common meeting time among teachers help promote relationships. Tallman and Van Deusen (1994) observe that the greatest amount of collaboration occurs when the teacher has a flexible timetable and team planning is encouraged by the leader. From the author's point of view, the role of the leader in promoting relationships goes far beyond scheduling. Leader support includes working directly with teachers to develop their understanding of their roles in an organisation.

Summary of leadership

To survive under conditions of complex and fast change, schools might have to become learning organisations. In schools, the assumption that changes come only from individuals in top positions seems to ignore the invisible leadership of low-level staff members. More studies are shifting focus to teachers as leaders (Wasley, 1991; Howey, 1988). The recent educational reform movements, namely restructuring and site-based management, have promoted increased teacher participation and leadership in the decision-making processes of various aspects of school administration. It has become increasingly clear that what is needed are professional learning communities in which teachers and leaders work together and focus on shared goals.

The literature of new leadership has shown the shift from command and control to coaching and team building. The author very much agrees that though coaching and team building leadership has claimed to be more common practices nowadays, the roles of leaders are still very important and powerful. Hoy and Brown (1988) point out that effective leadership dimensions in school require initiating structures and consideration. This means effective school leaders have to be both task and people oriented to live on in the culture of change.

The reason for selecting and investigating the issue of relationship building is that the author is in complete agreement with Fullan (2001) that structural barriers may make it difficult for people to have time to get together and that cultural barriers can cause teachers to resist interacting with each other in new ways.

METHODS

Research rationale

This research was conducted within an interpretative framework. The methodology employed is a case study using interviews and documentary evidence.

The author aimed to investigate specifically at relationship building and by doing so hoped that the roles of leadership would emerge out of it. To concentrate on relationship building, participants were interviewed including the institute chief, the assistant chief, the program head, and the academic staff in a language institute. Upon doing this, it would be possible to find out whether relationship building was just one person's idea at one level or it was a cultural concern throughout all levels. The investigation also covered how the relationship was managed and what the leadership and management procedures were to enable this.

Participants

Eight participants took part in this study. They are staff members of a language institute at a Thai university. These participants, divided into two major groups, represented the managerial and the teaching staff. According to their duties, the institute chief, the assistant chief, and the program head were classified as managerial personnel while the academic staff, including the course coordinators and instructors, represented teaching personnel.

The participants have been working in the institute ranging from six months to seven years. Their ages vary from twenty five to fifty one. Three are male while the others are female. The proportion of interviews was divided into five groups: institute chief (1 position); assistant chief (1 position); program head (1 position); course coordinators (2 positions) and academic staff (3 positions).

Data Collection Methods and Procedures

Two data collection methods were used: a semi-structured interview and documentary evidence. With interviews, the respondents were able to give in their own words their views and perceptions about relationship building in their organisation. Documentary evidence was needed for data triangulation.

The interviews were conducted in an arbitrary manner regardless of the participants' positions. For ethical reasons, prior to the interviews the participants

were assured that the name of the institute would be concealed and their names and information would be kept strictly confidential and used only for the purpose of this research.

The participant was interviewed individually in quiet, comfortable surroundings within the institute. After the interviews, the participants were requested for documentation e.g. schedules of meetings and any written documents regarding relationship building. The author also collected available printed sources.

All interviews were conducted in both Thai and English. They were audiotaped and transcribed accordingly.

The data analysed were mainly content examined in two main groups (managerial level and academic level), (a) the institute chief, the assistant chief, the program head, and (b) the academic staff. Comparisons between two groups were then drawn out. Because academic staff positions comprise course coordinators and instructors, the author attempted to reveal the combined analysis of the group.

Limitation

There is a limitation in the study. With regard to its small-scale investigation, it lacks generalisability of results. Although not a great deal can be generalised from a small sample across all population in the world, this research study at least will shed light on future research into leadership and relationship building in different contexts.

RESULTS AND EMERGENT FINDINGS

The interviews attempt to answer the research question, *"What are the roles of relationship building and leadership of staff members at an institute in a Thai university?"* To answer this research question, eight interview questions have been formed. These questions can be categorised into three groups. Group 1, (involving questions one and two), explores building relationships, while group 2, (questions three through seven), focuses on team approach and practices and satisfaction of teamwork. The last group, question eight, aims at exploring decision-making roles. The interview results were summarised using the author's own words. Some direct quotations are used as appropriate for result presentation.

Interviews

As for the first question, "How important is the building of relationships in the institute?, interestingly, in most cases, the participants' responses were quite similar at all levels, including phrases such as 'extremely important' or 'key factor', but in some cases, they gave more specific explanations such as, 'not given the first priority' or 'important depending on what kind of relationships: personal or

academic'. Individuals in supervisory roles viewed the building of relationships as very important factors.

The interviewees provided various responses to the question "Why it is important for relationship building?" ranging from 'to promote effective team working', 'needed but not at the forefront' to 'important but wishing there were more opportunities for more relationship building.' The majority of the participants, particularly at managerial level, stated that to work and support one another required good relationships; otherwise it would be hard to overcome problems. Two staff members though did not deny its importance argued for more chances of relationship building.

Generally, the results reveal that relationships are needed to support each other and to facilitate the work process.

Although some of the previous responses reported the necessity of working in team, it was intended to have more elaboration on it. The question was then posted regarding the importance of working as a team. All interviewees in the management positions believed that working in team was important and should be fostered, but a few on the other end claimed that it was not always necessary to work together all the time as not all tasks were possible for team work. In summation, the participants see the merits of team work; however, sometimes individual input is required. Additionally, some types of jobs may not be conducive to working as a team.

While some participants gave their explanations of the significance of working as a team, some of their answers partly touched upon the pros and cons of team working. To extract additional information, the advantages and disadvantages of working as a team were asked.

The data show that all participants at all levels perceived diverse advantages of team working such as sharing ideas, having support from others and so on. Interestingly, however, all academic staff and the institute chief perceived some weaknesses of working as a team such as giving up control, needing consensus thus time consuming, and conflict of interests. In general, there are advantages and disadvantages of working in team reported by the participants. Nevertheless, the advantages seem to outweigh the disadvantages.

Regarding the participants' contribution to develop a team approach, it was reported that there are many ways to develop a team approach, including conducting meetings regularly, treating others equally, and fostering team spirit. Responses provided seem to vary, probably depending on the position levels the

participants hold. The managerial personnel tend to be more used to developing a team approach than the teaching personnel.

Continuously, the author further investigated whether what the participants had done to develop a team approach was good enough or sufficient. Almost all participants at both levels reported insufficient amount of team working in various areas and thus better relationships and dynamics should be encouraged between staff members. In addition, one of the course coordinators particularly addressed the problem of having too many things to do and not having enough time to cope with them. The data reveal that largely the instructors were quite satisfied with what they had done to promote relationships. Reportedly, what most participants have done so far to develop teamwork is not yet satisfactory. There seems to be a need for more relationship building and improved team spirits between staff members.

To be able to obtain the information about how they worked on the relationship building in particular, they were asked whether they had meetings or activities in which they had taken part together. Also, they were requested to describe a small aspect of activities and meetings they had had. The findings indicate that there were a considerable number of meetings being conducted in the organisation both informal and formal ones. All the participants were involved in some forms of meetings in association with their own levels and those concerning the whole group of staff.

The assistant chief and the program head, however, argued that there were not enough meetings between the two extreme levels and that there should be more. To conclude this, the results indicate that a number of meetings are held within the language institute. Reportedly, some activities are also organised. Still, there are some concerns aired by several participants that a certain kind of meeting is in need at some level.

For the last interview question, the participants were asked about their involvement in a decision making process within their organisation. All managerial staff members revealed that for general policy or management decisions, the institute chief makes final decisions in consultation with other management members, but other smaller decisions are made by course coordinators who would usually consult within their teams before reaching the decisions. With the academic staff members' responses, it can be drawn out that most of them are not actively involved in the management process although they do make decisions on the courses they are responsible for and on the students' performance. It can be said that the managerial and academic staff of this institute have a clear role in a decision making process. In general, the institute chief, who would consult other supervisory staff, makes general and management decisions. The academic staff, on the other hand, make academic decisions on their own areas of responsibilities in consultation with other colleagues. Decisions about students' performance are under the discretion of individual teachers.

Documentary evidence

The documentary evidence gathered includes the language institute calendar, starting from September to November 2006. The calendar notes all the details of schedules of meetings and academic activities within the institute. In addition, information on students' social programmes was collected. Although these activities were intended for the students, language institute's teachers participated and worked together as a team to develop and try to bring success to them as reported by some participants during the interviews.

The data from these pieces of evidence show that within the period of three months the language institute has managed to have five formal academic meetings at different levels in addition to the social programmes arranged with students. Five meetings as listed out can be divided into three different types: management, staff and teacher. Table 1 provides the details of the meetings.

Table 1: Formal meetings conducted within a 3 month period (September – November 2006)

Types of meetings	**Staff concerned**	**Times**
1. Management meetings	managerial staff	3
2. Staff meetings	all staff	1
3. Teacher meetings	academic staff (all teachers)	1

Such documentary evidence makes it possible to draw a conclusion that the information provided by the participants while being interviewed regarding existing meetings and activities credibly corresponds with the verification in printed sources. It is interesting to note that despite what the assistant chief said, there seems to be a lot more meetings where information is given and where staff members have the opportunities to discuss.

Emerging roles of leadership and relationship building

Considering the responses from the interviews and the documentary evidence, the research question can be answered. The roles of leadership as they emerge from

relationship building signify the leadership approaches of leaders and subordinates (managerial and teaching staff) in this study. It is important to mention that there is no best leadership role nor is there one best way to be a subordinate. Leadership is usually situational. However, from this study it can be seen that the managerial staff in the language institute tend to favour participative leadership (Zoglio, 1995) in which people usually administer duties in an impersonal but effective manner. The subordinates are able to communicate easily and directly with them. The role of the managerial staff fits with participative leadership in that it is concerned with power sharing and empowerment and is most often associated with the decision making process in which four main forms are taken: autocratic decision, consultation, joint decision making, and delegation.

As for the teaching staff, the author perceives that their roles are on the side of cooperators (Zoglio, ibid.), though not completely. They practically value opportunities to share responsibility, accountability and power with their superiors. They are a source of honest and objective criticism and feedback to their superiors if such communication is needed. Sometimes they may not take time to particularly promote interpersonal relationships and thus may give the impression of being disinterested in others. They usually interact well with participative superiors.

On the whole, the role interactions between the managerial and teaching staff in the institute can be identified as supportive (Walters, 1987). These people are quite dedicated to harmony and usually prefer to avoid conflicts at all costs.

The roles of relationship building of the staff members in the language institute suggest that there is a need to maintain and build good relationships with colleagues. It is found that relationship building is not just one person's practice at one level but it is a cultural concern throughout. To conduct both regular formal and informal meetings, share ideas, maintain good personal and academic relationships, encourage working as a team, treat people as equals, and foster team spirits are by and large what the participants have been practising to develop a team approach. However, according to many of the informants, they are not quite content with what they have undertaken so far and claim that more teamwork in many areas is indeed in need.

DISCUSSION

Findings from the interview questions will be discussed in three main groups.

Group 1: Relationship Building

According to the participants, the issue of building relationship between colleagues is crucial. To promote better relationships requires cooperation from everyone in the workplace no matter at what levels. Kouzes and Posner (1993) point out that leadership is a reciprocal relationship between those who choose to lead and those

who decide to follow. In the old days people in management positions might influence others through the exercise of authority, through persuasion, through being a strong role model and through fear. However, in present times the acceptable forms of influence have changed. It is no longer enough for leaders to rely on the authority of their office or to influence others through orders. Building good relationships between colleagues is thus one of the most significant elements that lead to effective leadership and management (Fullan, 2001).

The outcomes also reveal that most participants in the study accept that relationship building results in mutual support, enforcing and promoting the same kind of quality throughout all levels in the organisation. Therefore, those who lead must try to foster a good relationship by giving it more opportunities and prioritise its value. Not only should this practice be the leader's culture, but it should also be everybody's. Fullan (2001) asserts that if led well, long-term commitment can be generated in those at work, both internal and external. People are then likely to commit themselves to putting their energy into actions so as to improve things. In this manner, the importance of building relationships cannot be taken for granted.

Deficient relationships between colleagues cause teachers to become distant and eventually ignore one another (McLaughlin and Talbert, 2001). In the Thai higher education context, the possibility is that the importance and value of relationship building is not explicitly illuminated nor might it be linked to long-term organisational success. As a result, teachers may tend to isolate themselves and reinforce the norms of individualism and conservatism (McLaughlin and Talbert, ibid.)

Group 2: Team approach / team practice and satisfaction

The majority of the participants in this study value teamwork particularly those at managerial level. Some of the teaching staff however view it in a slightly different way. They claim that though teamwork is important, it is not always practical as it depends on the task and individualised contribution. This has been made clear when considering what some participants pointed out about the pros and cons of working as a team. The author tends to agree that teamwork is not always needed as long as team members can work inter-dependently to achieve a common goal. Salas et al. (1992) indicate that the notion of shared goals is essential to teamwork because it is what ties them together and induces them to take an interest in each other's success. Simply being on a team can be a key source of employee motivation, status and pride for having been selected to participate. Nevertheless, a downside should be considered as well. Javitch (2003) argues that teams may take longer to achieve a goal than an individual would, and teams grow through predictable stages that are time-consuming, such as member selection, organisation, socialisation and creation of final products or ideas.

When asked what they have done to develop a team approach, many participants could not come up with concrete answers. It is possible to claim that they may not have enough skills, knowledge and capacities for effective teamwork as they may

not share clear goals or purposes as a team. Therefore, defining specific goals is important. In addition, the team and its members must establish a clear approach to teamwork with adequate team training and preparation (Katzenbach and Smith, 1993). This requires team leadership as opposed to traditional top-down leadership.

As teased out from the findings, the participants have been involved in a number of meetings they are assigned to or put themselves in both formally and informally at various levels. Particularly, most people at the level of management attend and intend to have a number of meetings with the hope that meetings will stimulate and clarify thinking and provide free interchange of ideas (Johnson, 1998). However, the data from the Management Workshops in 1999 contradict the findings from this study by claiming that too many meetings are unproductive and may come with disadvantages. For example, they may go too long and lose track of the main issue. They could make it difficult to pin responsibility to any individual in addition to a possible shortcoming to reach a decision. On the whole, however with the growing emphasis on teamwork, meetings become essential and can be an effective tool of management if employed properly.

At this point, the author is aware that teamwork is crucial and for teamwork to be successful, teams and individual team members need to have clear, shared goals; a sense of commitment; access to the needed resources and skills; mutual accountability and undoubtedly effective relationships.

Group 3: Decision making process

The interview outcomes display the roles of decision-making in the institute quite overtly. Although the participants in the academic staff positions have rights to make decisions on the courses they are in charge, they are not enthusiastically included in higher-up decisions for which the authority and final judgment is maintained merely by the managerial personnel. It might have been productive if the lower staff had been taking an active role in general decision making with the management. Nonetheless, there might be some other bases to bear in mind before putting the blame solely on the managerial staff if taking a look from the management's point of view. As Fullan (1993) stipulates, teams often face issues that can decrease the effectiveness of teams and specifically their ability to make decisions: the time trade offs in decision making, problems of groupthink and pressure to conform, potential for increased conflict over decision making and individual resistance to working in teams. Considering such factors, finding equilibrium between the two extremes, the managerial and teaching staff, is an important key for giving voices to all team members. To achieve it, sufficient team coaching is needed otherwise it is unlikely that a team will work effectively to develop and realise a shared vision.

Conclusion

Relationship building has been found to be a very important aspect of leadership and management in education. Most of the participants in this study perceive the advantages of teamwork; nevertheless, there are some drawbacks reported and individual input may also be needed to optimize work some time. Conducting meetings, treating others fairly, and fostering team spirit are some examples of how to develop a team approach. The findings also reflected that in fact there is a need for more team spirit and relationship building between staff members. A gap between the managerial and teaching staff still remained in the main decision making process. Possibly, in order to bridge this gap both ends should seek coherence and create a common culture, apparently under proper guidance of the figure of authority.

With the relationship building that exists in the language institute, it may not be too far-fetched for its staff members to work as a productive team provided team training is introduced. Scheduling common planning time for teachers may be a first effective step to take followed by team training. Tallman and Van Deusen (1994) suggest that the maximum amount of team planning emerges when team members hold adjustable schedules and team planning is furthered by the person in charge.

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TEACHER EVALUATION AT HIGHER EDUCATION: ANALYSIS OF CURRENT PRACTICES AND PROPOSALS FOR FUTURE DEVELOPMENT

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ABSTRACT

The paper tackles the issue of teacher evaluation at higher education institutions from different aspects. It starts with a critical analysis of the current practices of teacher evaluation at the university level, then expands the analysis to include a thorough investigation of the traditional practices of teacher evaluation as highlighted by the current literature in the field, along with major psychometric and statistical problems that emerge from utilizing student-based teacher evaluation data in reporting, analysis, and decision making.

A representative sample of the faculty members at the College of Education were surveyed to draw on their experience in dealing with the currently used teacher evaluation form, and to explore their views about the problems and shortcoming of the form, as well as the validity of the form, and their suggestions for improvement. In addition, the faculty views would be used to see how far they are from similar practices as reflected by research in the area.

The paper concludes with some suggestions and proposals for future development that deal with psychometric issues, instrument construction, multiple measures of teacher performance, and the potential drawbacks related to such aspects.

INTRODUCTION
Some institutions of higher education may not have a well-established philosophy and clear objectives about teacher evaluation as a system, which have negative impacts on teacher evaluation itself. These impacts in turn may lead to fallible interpretations, invalid inferences, and inappropriate academic and professional policy. This paper tries to investigate the current practices of teacher evaluation in higher education, and provides some proposals for future development.

REVIEW AND ANALYSIS OF RELATED LITERATURE ON TEACHER EVALUATION
According to research findings on teacher evaluation in higher education (Adams, 1997; Blunt, 1991; Rifkin, 1995), the main purpose of teacher evaluation is providing feedback to the teacher for professional development (formative evaluation), and reporting on teaching effectiveness as an end process (summative evaluation). Although institutions of higher education use student evaluation of teaching to evaluate teacher effectiveness, research shows, however, that psychometric issues of validity and reliability remain unresolved (Wright, 2006). Students tend to give higher ratings when they expect higher course grades, which influence teacher's grading polices, teaching styles and course

difficulty (Wilson, 1998). But course difficulty has no impact on student evaluation of teachers (Millea & Grimes, 2002). Some teachers reduce course content and lower performance standards to help students get higher course grades (Millea & Grimes, 2002). Mostly, students lack the level of knowledge necessary to evaluate their teachers (Wright, 2006). Despite this fact, Wright (2006) found that other factors, such as workload, student grades, perceived student's fairness of teacher's grading, and teacher's appearance are strongly related to student evaluation of teachers, though they are not related to learning (Wright, 2000). However, class attendance and students evaluation relate to student learning, but do not influence student ratings. In addition, pessimistic attitudes of students toward future course grades negatively influence their ratings of teachers (Millea & Grimes, 2002). Nevertheless, teacher reputation among students has a positive influence on student ratings.

In this review of literature on teacher evaluation, I focus on two types of issues; conceptual-methodological and statistical, and treat them as having interrelated impacts on teacher evaluation (Adams, 1997; Gilmore, 1984; Rusaki, 1996). Conceptual-methodological and statistical issues of teacher evaluation in higher education can be seen from different perspectives; according to their impacts on teachers and institutions. For instance, some institutions compare teachers based on student ratings, and this is inappropriate. Because teacher teach in different academic disciplines, and teach different courses at different classroom settings. In addition, teacher experience can vary among courses, and from one classroom to another within the same academic discipline. The academic orientation and content knowledge of the teacher in his/her major area of study can also play a role in determining teacher's effectiveness. The roots of such comparisons stem from utilizing the mean score of student rating in such comparisons. Statistically, the mean score is sensitive to extreme and outlying scores, especially in skewed distributions of scores (Cashin, 1990). Thereby, relying on the mean score in comparing teachers, without taking into account the factors mentioned above, would be invalid and unreliable in making sound inferences and decisions. The problem persists when teacher evaluation authorities use Pearson correlations of student ratings in data analysis to determine teacher effectiveness. Because correlations in this respect are irrelevant across courses, departments, and disciplines (Platt, 1993; Stone, 1995). In addition, it is of course inappropriate to compare teacher effectiveness by comparing teacher's knowledge of course content, classroom human relations between teachers and their students across courses, departments, colleges and disciplines. Comparisons may be applicable when general factors come into play, such as material presentation, organization, clear objectives, clear assignments, fair grading of student work, and teacher preparation for lectures (Office of Institutional Research, 2006). In addition, as Platt (1993) contends, the teacher evaluation form per se could avert teacher's credibility and authority in the classroom in particular and the university in general. In addition, students' age does not allow them to know what the society requires from the teachers, or what kind of skills the employers need. If we consider such factors as student's age, little experience in higher education, low performance, and anonymous ratings, we need to view student evaluation of teachers with great caution when making valid inferences about teacher performance. These factors may result in distorted image conveyed by students about their teacher, wrong answers to the open-ended questions, and inaccurate ratings. Institutions of higher education usually take student's judgments in this case as for granted, and never ask students about the accuracy and correctness of their judgments and ratings, or if they can support their judgments with concrete evidence (Adams, 1997). The other side of this

problem relates to the definition and measurement of the target latent trait. It also relates to the issue of how to minimize subjectivity in the measurement and evaluation of teacher performance, along with a psychometrically sound rating scale (Damron, 1995). Despite this psychometric scrutiny, Damron (1995) found that when the teacher has high popularity among students, students tend to assign him/her high ratings. From the psychometric perspective, this process could lead to reliable ratings, but its validity is questionable.

Some problems and errors emerge from the statistical analyses of raw data for teacher evaluation with specific variables. The first problem is that student ratings are not consistent across courses, or among the same teacher who teaches different courses at the same academic department. So, comparing the performance of the same teacher within the same department across the courses taught, based on student ratings and the analysis of these ratings, could be invalid and mostly unreliable, even though the median score is the substitute for the mean score. The second problem, as explained by Mason, Steagall, & Fabritius (1995), relates to the three groups of variables that affect student's perception and image about "teaching effectiveness"; namely, student characteristics, teacher characteristics, and course characteristics. The problem is that institutions of higher education view teacher characteristics from students' perspective as reflected in their ratings about teacher effectiveness. Some institutions of higher educations consider this collective viewpoint, unfortunately, as conceptually and statistically valid with respect to teacher effectiveness, especially when ratings on this group of characteristics enter into correlation analysis of raw data. However, student personality and attitudes must be irrelevant factors in determining teacher effectiveness (Millea & Grimes, 2002). In addition, these characteristics result in skewed distributions of student ratings, which lead to rating inflation/deflation, as related to the average point on the rating scale, and affect student rankings of teachers (Katzner, 1991).

Based on the review and analysis of the available literature on teacher evaluation in higher education, three main points come into focus. First, teacher effectiveness, as a latent trait, needs to be operationally defined, and its components and latent structure be articulated. Second, statistical analysis of student ratings of teacher effectiveness requires more scrutiny. Third, teachers should also be the focus of research studies on teacher evaluation, not only students, in order to view the entire issue from different viewpoints.

Teacher evaluation at the University of Bahrain
In order to view the issue of teacher evaluation in higher education from different perspectives, I reviewed the recent reports and studies conducted at the University of Bahrain, and surveyed a representative sample of teachers in the college of education. Based on the review of documents, I came up with the following conclusions:

1. The whole process of teacher evaluation should be the focus of empirical testing, and the psychometric characteristics of student survey of teachers, such as item difficulty, item discrimination, reliability, and validity, were not established.
2. Some items of the student survey of teachers focus on personality characteristics of the teacher, and some other items ask the student to rate teacher's content knowledge of the course, and teacher's general knowledge.

3. Teacher evaluation authorities use the mean and standard deviation of student ratings to compare teachers in teaching effectiveness across departments, colleges and disciplines.
4. Teacher evaluation authorities use Pearson correlations to relate student ratings at different courses from one department to another within the same college.
5. During the application of student survey of teacher evaluation, students are asked to avoid giving the highest rating (5) or the lowest rating (1) to one teacher on one form per course.

Regarding the opinions of the college of education faculty members, I randomly selected a sample of 70 teachers (N=90) who represent about 73% of the total faculty members in the college. The response rate was 83%. The survey consisted of two open-ended items; one focuses on the major drawbacks of the currently implemented teacher evaluation form, and the other asks for the major problems with the teacher evaluation report that each faculty member receives each semester because of student evaluation of teachers. The following are the main outcomes of the survey, which seem consistent with the current literature on teacher evaluation in higher education. The respondents believe that there are major problems with the current teacher evaluation form (hereafter referred to as "the form"), and the way it is implemented. The findings are shown in Table (1) below. Faculty members' responses to item one, regarding the major problems of the teacher evaluation form, ranged from 74% to 92%. Low percentages in the range may reflect the degree of importance of that particular problem to some faculty members, and not necessarily that the problem itself is not important. Validity and reliability, for example, may be unimportant issues to some faculty members because they may not be aware of the role these issues play in determining the credibility and accuracy of human judgments through measurement instruments. High percentages, on the other hand, may imply the general issues of teaching effectiveness as a construct or latent trait that most faculty members should be aware of, or reflect faculty member's role in the construction of the teacher evaluation form.

Table (1): Major problems with the Teacher Evaluation Form and its implementation as identified by faculty members

Major problems	%
The form lacks the basic psychometric properties such as validity, reliability, and objectivity.	74
The teachers did not participate in the construction of the form	92
Some items in the form are similar in content or overlapped, and some other items are unclear in purpose.	90
Some items in the form ask the student to evaluate teacher's general knowledge, and some other items assess teacher's personality characteristics, not performance.	92
The form does not consider the differences among courses across different disciplines, and treats teacher evaluation as a one-dimensional trait.	87
The form does not consider applied courses from one college to another, especially that the evaluation process takes place well before the teachers finish teaching the application part of the course.	79
No items on teacher's classroom management skills and communication	88

skills do appear in the form.	
Students are immature and inexperienced to take up the task of teacher evaluation, or judge teacher effectiveness.	89
Students take the issue of teacher evaluation as a routine task that they must do!	92
The form lacks the guidelines that show students how to evaluate their teachers honestly and accurately.	85
Students are not aware of how to take full responsibility for their ratings and written comments. Written comments of some students are not consistent with the ethics of evaluation.	79
Easy teachers who give students high grades get higher ratings!	92
Students assign different ratings to the same teacher who teaches different courses in the same department.	80
Students base their ratings of teachers in some courses on teacher reputation among students, such as emotional reactions from their peers or based on personal relationships with teachers.	82

The faculty members in the survey did not specify which types of validity and reliability are missing in the teacher evaluation form and the teacher evaluation report.

From the responses to the second question on teacher evaluation report, I arrived at some conclusions that appear in Table (2) below.

Table (2): Faculty members' observations on the Teacher Evaluation Report

Faculty observations	%
The report is ambiguous, purely quantitative, and does not provide the written feedback of students to their teachers.	70
The report is neither valid nor reliable, and the summary results do not reflect teacher effectiveness.	74
The report summary statistics are ambiguous and not understandable by every teacher; they need explanation by a statistician	79
The report does not show any pictorial display of student ratings of teachers.	70
The report should show those items on which the teacher got good ratings and the items where he/she got bad ratings, and should avoid some verbal terms such as "weak" or "very weak".	85
The report should be criterion-referenced, and must show a cutoff score along with teacher ratings per course.	81

The faculty members' observations on the teacher evaluation report ranged from 70% to 85%, which means that most of them agree with the shortcomings they identified in that report. It is evident that faculty members need to know their performance level as compared to a cut score. The written student feedback looks important for teachers to better understand their performance level. This means that teacher evaluation report should consider both the quantitative and qualitative feedback to teachers to see the whole picture, and to maintain the necessary integration among the components of teacher effectiveness.

Proposals for future development

I believe that any proposals for future development of teacher evaluation in higher education should account for a number of issues that need more attention in order for these proposals to have successful implementation. Our vision and philosophy of teacher evaluation should concentrate on creating a community of teachers and students that encourages a suitable climate for learning, and facilitates mutual human relations and communications between the two sides. This, of course, will encourage a learner-centered classroom environment that accounts for the prior educational contexts that explain the current behavior, background, and personality of students. This kind of learning is based on certain principles that both parties need to be aware of, such as student's right to get enough information about the course in order to plan his/her learning in advance, and that the student should take full responsibility for his/her learning. Second, evaluation of teaching effectiveness should be an important educational goal that the institution should strive to achieve. Third, teacher's need for feedback on his/her teaching is as important as the feedback given to the student on his/her classroom learning. Fourth, feedback information to teachers and students need to maintain high levels of validity and reliability. University authorities, at different academic and administrative levels, can use such kind of information for course development, annual review of courses, academic promotions, and academic planning for student learning. Based on these principles, I present the following proposals for future development of teacher evaluation in higher education:

1. Universities need to restructure the entire process of teacher evaluation to include clear vision, mission, and clear philosophy of what the university administration and policy require of such an evaluation. If we believe in the "power of a rational goal-directed, mission-centered, process-dominated approach to policy implementation" (McInnis, 2004, p.6), we should connect teacher evaluation policy to teacher evaluation practice rather than just implement that policy. This paradigm shift in the policy should require a broad range of teaching performance indicators, solid evidence base from surveys of student experiences, especially senior students, rewarding scholarly activities of teaching, some changes in promotion criteria, and a formal program of certification for university teachers (McInnis, 2004). The certification program needs to include, for example, such areas as college teaching methods, learning and cognition, classroom assessment; technology mediated teaching and learning environments. McInnis (2004) identifies some elements of policy-practice connectivity that may help university authorities, at different administrative and academic levels, in implementing and monitoring teacher evaluation system. First, time and timing in implementing reforms should be realistic and sustainable. Second, goals should be tangible and achievable, and address real issues. Third, reforms should be technically sound, which means that they need to be valid and work as intended. Fourth, connect the reforms to the institutional policies, to have them accepted by different administrative and academic levels. Fifth, reforms should be top-down (administrative levels) and bottom-up (academic levels), though support from the top is always needed. Sixth, the policy should be clear, credible, compelling, effective in providing concrete evidence to stakeholders, maintain high quality of reporting and feedback, and value-driven.

2. Institutions of higher education should view teacher evaluation process as an integrated system within the vision and philosophy of the university. These institutions may need to use multiple measures of teacher evaluation to view the latent trait of teacher effectiveness from different perspectives, and think of this trait as having different facets.

Multiple measures may include, but not restricted to, teacher evaluation form, teacher self-evaluation form, teacher portfolio, and colleagues evaluation of teachers. Regarding evaluation of teachers by their colleagues, they should focus their evaluation on important aspects that represent teacher effectiveness such as relevance of instructional materials to the course, course plan, teaching methods, classroom assessment plan materials, content coverage and depth, and how current are the content and knowledge of the courses. The colleagues may need to review these materials before and after their classroom visits to the teacher. A careful design of teacher portfolio helps colleagues to concentrate on the most important aspects of teaching effectiveness. The information gathered from other sources such as teacher evaluation surveys, from either colleagues or students, needs integration with the other sources to get a comprehensive view about teacher effectiveness. However, these instruments of teacher evaluation, in order to be effective, must follow a pre-established set of criteria or frames of reference to maintain high degree of credibility and consistency of ratings. This can be done either by consulting an existing set of instruments that pertain to the general domain of teaching, by adapting a certain set of instruments to the local environment, or by constructing new instruments. If the institution chooses to use existing instruments, careful attention should be given to culturally-bound items that are essentially designed for a particular educational environment. Moreover, if these items are to be removed, other items should replace them to maintain a comparative degree of validity and reliability between the original instrument and the modified one. This process should apply to all instruments of teacher evaluation. For example, if we require the teacher to show content coverage, content expertise, instructional delivery skills, instructional design skills, and classroom assessment skills, we should maintain these aspects in all other measures that pertain to teacher evaluation and effectiveness, and follow the same process of instrument construction.

3. The teacher evaluation process should take careful scientific steps before and after implementation in order to avoid any pitfalls as much as possible. Teacher evaluation team needs to present the full proposals of teacher evaluation to the university administration, college deans, and department heads as the first phase. During this phase, the evaluation team should explain the entire process of teacher evaluation, the importance and strategy of teacher evaluation, and the implications of such a system for the development of the institution. The second phase focuses on presenting the whole evaluation system to all faculty members in a general assembly, and then for each college separately. The teacher evaluation team should consider all remarks and accept all critiques that faculty members may raise. The third phase is concerned with the pilot study of teacher evaluation to establish psychometric properties such as validity, reliability, item difficulty, item discrimination, standard setting and a cut-score (e.g., 70%). The evaluation team should test each evaluation instrument at a time, starting with the major instrument of teacher evaluation; namely, the teacher evaluation form designed for students to rate their teachers. The evaluation team should draw two different random samples, one from the faculty members' population, and the other from university courses at the undergraduate level. In the fourth phase, the teacher evaluation team is to present the outcome of the pilot study before all faculty members and university administration. The team should explain the results of statistical analysis. In addition, the team has to explain how the psychometric properties, criteria, standards, and cutoff score were established. The evaluation team must take seriously all scientific and procedural notes and remarks raised by faculty members and university administration. The fifth phase deals with the final scrutiny of the psychometric properties, standards and cutoff score of

the evaluation tool. This requires the evaluation team to re-consult the field for this purpose. At a further stage, and after getting the appropriate feedback about teacher evaluation, teacher evaluation team may replicate the same process of teacher evaluation with other instruments such as teacher portfolio.

Careful consideration needs to be given to the methods of establishing validity and reliability regarding teacher evaluation instruments in general. In addition, using more than one method of validity and reliability is important to overcome the biases and problems inherent in the use of a single method (Pedhazur & Schmelkin, 1991). Content-related validity, for instance, can be achieved by giving the teacher evaluation form, for example, to a panel of judges or experts. These experts (e.g., faculty members) check for certain issues, such as item relevance to a particular domain (teaching methods, content coverage, classroom assessment), and whether the item is related to the entire instrument. The degree of agreement among the experts can be expressed by the relevant statistical index, such as Kappa index. Predictive validity can be established by correlating a set of data gathered from a large sample of teachers using a teacher evaluation instrument with a similar set of data on the same sample of teachers on another instrument of teacher evaluation after some period of time. The higher the correlation coefficient between the two instruments, the higher the predictive validity of the target instrument. Construct-related validity can be established by computing the internal consistency among items, and finding the inter-item, and item-total, correlations among the items. In addition, convergent validity must be established. Evaluation team can collect adequate data from the target teacher evaluation instrument, and correlate these data with another set of data collected from a similar well-established and standardized teacher evaluation instrument. High correlation between the two instruments indicates high convergent validity (Toland & De Ayala, 2005).

Regarding reliability, it can be established through different methods. Test-retest reliability, for example, can be attained by collecting teacher evaluation data by the same instrument at two different time intervals, and computing the correlation coefficient between the two sets of data for the same sample of teachers. Equivalent forms reliability can be achieved by constructing two equivalent forms of the same instrument and collecting adequate data on both forms, then computing the correlation coefficient. Internal consistency reliability can be established through computing the inter-correlations among items by using the Cronbach alpha formula. Evaluation team can also establish interrater reliability of the teacher evaluation instrument by suing the Delphi method (Tigelaar et. al., 2004). Delphi method is efficient for obtaining information from a panel of experts to reach consensus, consistency, and stability of ratings. It is actually a validation method where bias of dominant raters' views within group discussions is avoided, especially when the instrument to be validated has different domains (e.g., teaching methods, content coverage, and classroom assessment). Raters can establish more than one performance level or cut-score, and check for consistency of ratings.

4. Regarding the statistical analysis of teacher evaluation data, it should focus on such important points as criterion-referenced evaluation of teachers that requires the minimum acceptable performance of teachers (e.g., a cutoff score of 70%). In addition, it needs to include the median score and a confidence interval score in the teacher evaluation report to avoid the disadvantages of the mean score mentioned earlier in this paper. Establishing a cutoff score for teacher performance can be achieved by several methods; one of them is the Delphi method explained above. Sometimes it is preferable to have more than one cutoff score or multiple performance levels to determine different levels of

teacher proficiency; for professional development purposes and remedial actions within the academic department. Teacher evaluation team should be aware of the problems that may arise when using inappropriate statistical techniques for analyzing teacher evaluation data, or when establishing the latent structure of teaching effectiveness as a latent trait that is mostly multidimensional. Some researchers use exploratory factor analysis (EFA) and principal components analysis (PCA) to analyze teacher evaluation domains and latent structure (Costello & Osborne, 2005). PCA is only a data reduction method, and EFA does not lead to inferences from data, and not designed to test theories or hypotheses. Hence, conventional factor analysis in this case may not be suitable for teacher evaluation data analysis, especially when individual student ratings or class average ratings is taken as the unit of analysis (Toland & De Ayala, 2005), because the standard statistical assumptions of independence are usually violated. The alternative, however, is using true factor analysis (e.g., confirmatory factor analysis) as Toland and de Ayala (2005) recommend. Beran & Violato (2005) suggest using multiple regression analysis of teacher evaluation data to determine which factors in the teaching domain have the major impacts on teacher performance and overall effectiveness. Hierarchical linear modeling (HLM) can also be an effective tool for analyzing teacher evaluation data, as it takes into account the institutional variables, and classroom variables that affect teacher performance, where this performance is nested within these two levels.

Actually, some **potential problems** may stem from the implementation of the teacher evaluation system in any institution of higher education; and they are as follows.

1. Validity and reliability of teacher evaluation: Institutions of higher education can get better indicators of validity and reliability of teacher evaluation if, as explained earlier in this paper, their instruments are well constructed, the data are valid and honestly collected, and the resulting reports of teacher evaluation effectiveness are valid and reliable. However, for some reasons the validity and reliability of teacher evaluation might be questionable, where some of those responsible for the evaluation process may lack the necessary knowledge and expertise to take up such a task, as well as the incorrect or inappropriate analysis of evaluation data in a way that violates the basic principles of statistical analysis. The evaluation team can overcome these impediments, to a great extent, through carefully designed and implemented intensive training courses in measurement, evaluation and statistics, on a regular basis, for those responsible for instrument construction and data analysis.

2. Teacher evaluation team needs to consider the recent developments in multimedia and technology and their impacts on teaching, learning, and classroom assessment environments. Using traditional teaching methods in a changing educational setting may lead to inappropriate evaluation of teacher effectiveness, and low student ratings, even though the teacher is performing well. As long as the learning paradigm is changing, classroom assessment delivery methods need to change, and must be embedded in the fabric of teacher evaluation system. For instance, communication and interaction between teachers and students is face to face (f2f), verbal and written. Teaching and learning through multimedia, such as online or web-based instruction, imposes different types of communication such as written text, static images (pictures, video, and graphics) that are integrated within the teaching-learning environment (Liang & Kreasy, 2004). So, in the multimedia

environment all kinds of interaction (academic, collaborative, and interpersonal) have a share. Thus, classroom assessment should undergo radical changes, and be at the center of curriculum design, to ensure quality of instruction through multimedia. The assessment process itself must enable students to monitor their progress, make the teacher give sufficient feedback to students on a regular basis, support peer learning and assessment, and support student self-assessment. In order for these changes to be effective, teachers must be aware that assessment should be continuous through the course. All these changes reflect a paradigm shift from assessment *of* learning (for grading and reporting) to assessment *for* learning that enables students to understand their own learning through continuous feedback, reflective thinking, and careful understanding of the goals of learning as reflected in formative assessment. In addition to traditional assessment tools (tests and exams), new tools need to come into play within the new environment of teaching and learning. These new tools may include proficiency demonstration (e-portfolio, and slide show), student collaboration (group projects, and peer reflections), and participation (threaded/unthreaded discussions, and questions/answers posted by students); just to name a few. As a consequence, all the elements in the new teaching-learning environment should call higher education institutions to make drastic changes to the traditional teacher evaluation instruments, wherever multimedia is used for teaching and learning.

I believe, however, that the promising changes in teacher evaluation methods based on the new multimedia environment are not sufficient without a set of student attributes that are important outcomes of university education. Barrie (2004) identifies three major attributes; scholarship (students attitude towards knowledge), life-long learning (students attitudes towards themselves), and global citizenship (students attitudes towards the world). As Barrie (2004) explains, these three clusters of students attributes must include such cognitive abilities and skills as research and inquiry, information literacy, personal and intellectual autonomy, communication; and ethical, social and professional understanding. Institutions of higher education will have better understanding of students' evaluation of teachers if they take these attributes into account and understand their potential effects on students' judgments, and conceptions about teaching and learning, when planning for teacher evaluation.

3. Recency effect of students' ratings on teacher evaluation could be a potential problem that may face evaluation. Research shows (Dickey & Pearson, 2005) that some institutions of higher education carryout the teacher evaluation process at the end of the semester. In this case, students resort to their memory repertoire to evaluate their teachers. This process entails a rating error called "recency effect", where students' ratings become as a result of memory decay. The halo effect will increase as time increases, which may lead to inaccurate and invalid ratings. In this case, mid-course formative evaluation of teaching is recommended to overcome this problem (Dickey & Pearson, 2005).

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PILOTING TRANSFORMATIVE LEARNING IN TEACHING ENGINEERING

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ABSTRACT

Recent development in education pointed to the need for many Asian countries to revamp their education philosophy and delivery. In April 2007 the Deputy Prime Minister of Malaysia threw his very strong support behind this. The major impetus is overall global and economic competitiveness. This is underpinned by the rapidly increasing roles of a country's human capital in a K-based environment. This paper reports on an attempt at introducing a relatively new philosophy of learning that had eluded many Asian countries for a long time. The need to move from *Rote learning* to emphasizing *understanding* and from an *Acceptance* mindset to one that is able to *reconceptualise* is underlined. However, very few if any study programs and institutions of higher learning in Asia even begin to try implementing it. At the authors' faculty staff agreed that a change in philosophy is required in order to sustain global economic competitiveness. The authors contend that this could be done by implementing what is more popularly known as *Transformative Learning*. A Pilot Study on three Engineering classes during the May 2007 Semester was conducted. Initial tests of the instrument were carried out on about 60 Engineering students in two classes that had already initiated aspects of *Transformative Learning*. The results from these initial tests showed that students also expected changes in their learning. The paper will report on both the initial tests results and the results of the three pilot studies.

INTRODUCTION

The idea of transformative learning was introduced back in the 1980's by Mezirow (1991), who, based on the eighty-three women returning to college in twelve different reentry programs, described ten stages of the process of personal perspective transformation starting from the experience of a disordering dilemma to reintegrating into society with the new perspectives.

Before researching into transformative learning, it is essential to review the available learning models to understand and realise the current learning styles and the benefits of transformative learning to students. Li (1997) showed a review of the literature and research areas of cognitive learning that comprise three predominant models of learning process:

- the objectivist model of learning - takes the assumption that there is an objective reality, and the target of the learner is to understand and modify behavior accordingly (Jonassen, 1993);
- the collaborative model of learning - takes learning as a social process, where the knowledge is shared among individuals through collaborative interpersonal interactions (Vygotsky, 1978);
- the constructivist model of learning – contends that knowledge is created by learners, rather than transmitted to the learners (Jonassen, 1993; Wittrock, 1986).

Transformative learning can be said to be an independent thought, or a constructivist model for learning (Mezirow, 1991; Christie, 2003). This is a concept of teaching and learning delivery that empowers students so that they become active learners who are independent, resourceful, adaptive, flexible, innovative and initiated. Active learners are those who learn through real actions. Real actions are activities that are self-propelled and are not a copy or a repetition of activities of others. An example of the latter is copying down notes from the white board written by the lecturer. Real actions are activities that are new such as searching for a reference book perhaps cited in the lecture and reading it from which the student gains new knowledge for him/herself. Or searching on the web for information on the topic discussed in a lecture.

The current education system in Malaysia is based on the first model of learning, where the learning process is rote learning. In addition, Asian societies are generally shackled by the Confucian value of respecting elders, both in terms of age and position. In education in Asia therefore the supreme position of the teacher/lecturer/professor is sacrosanct. As a result the position of the students is complete acceptance of the teacher's wisdom and assertions. In contrast, the transformative theory, which is based on the constructivist assumption (Cranton, 2006), requests the learner to construct or develop personal meaning from their own learning experience, and validate it through interaction and communication with others. Hence, transformative learning is a process of examining, questioning, validating and revising one's perspectives (Cranton, 2006).

The goal of this paper is to report on the switch from the objectivist to the constructivist model of learning. In other words, the learning and teaching process is moved from rote learning to emphasizing understanding and from an acceptance mindset to one that is able to reconceptualise. This idea of transformative learning is shown by a two-dimensional representation in Figure 1. Current learning is therefore in the lower left-hand quadrant of the diagram while the desired learning is in the upper right-hand quadrant. A move must be made from the lower left-hand to the upper right-hand quadrants. That move is *transformative learning.*
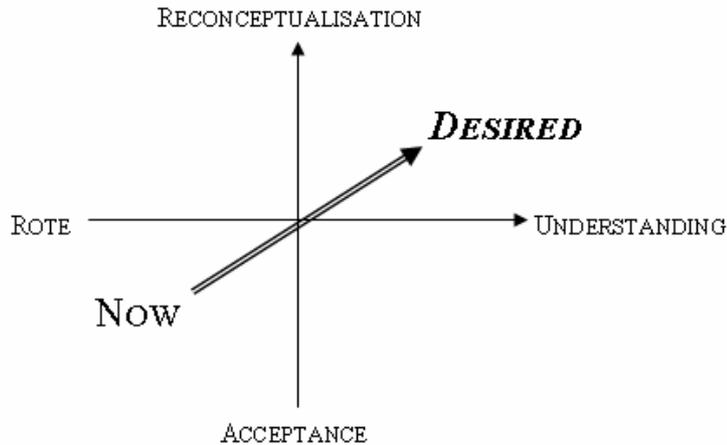
Figure 1: 2-D representation of Transformative Learning

RESEARCH METHODOLOGY

In attending to the students' perception of transformative learning, a set of questionnaire is given out to the students at the end of the course to observe students' opinion towards the new learning and teaching style, and in the preliminary stage. The target students considered here are level three students who take the subject "Quality Assurance and Management", and level two students taking "Combustion, Heat and Mass Transfer".

The items of questionnaire request students to state their degree of agreement, which are: strongly agree, agree, disagree and strongly disagree to the statement of the questions. The analysis of the response is carried out numerically by marking each of the responses 1, 2, 3 and 4, respectively. The total marks obtained by each student, and each question is then averaged to see the general response of the student and question. Depending on the average marks, the analyses of the results are divided into six bands as shown in table 1.

Table 1: The analysis of the questionnaire is divided into different bands to observe the degree of agreement of students towards the statements.

Band	Response	Comment
I	Mostly strongly agree	Students of this band generally agree with the question, with at least half of them chose the strongly agree option.
II	Strongly agree – agree	Students of this band are on the average agree band, where they have the roughly even distribution of the agreement.
III	Mostly agree	Students of this band are at the position that they are agreeing to most of the question, but not to the extent of strongly agree with the researcher.

IV	Agree - disagree	Students of this band are said to have some agreement and disagreement to the statements in the questionnaire. There are probably small amounts of strongly agreement in their opinion.
V	Mostly disagree	Students at this band are more towards the disagreement of the statements, with small portion of agreement of the idea of the researcher.
VI	Disagree – strongly disagree	Students of this band are generally disagree with all statements of the researcher, with those who obtained 3.5 point and above are said to be strongly disagree with the statements.

The reliability of the values is tested using the formulation of the parameter called *Cronbach's alpha (α)* (Cronbach, 1951). An alpha of 0.5 and above indicates a good consistency in data (Bowling, 1997), whereas an alpha of 0.7 and above is considered as satisfactory in the data analysis (Howitt and Cromer, 2003). The results obtained for this preliminary survey shows the reliability of the analysis where an alpha of 0.88 and 0.91 is obtained for the two subjects mentioned, respectively.

RESULTS AND DISCUSSIONS

In the preliminary stage, a total of 63 questionnaires were distributed among students who were in the authors' classes in the January 2007 Session. Encouraging feedbacks were obtained from the survey. Up to 54% of the responses fall within bands I, II and III, showing that students generally agreed and welcomed transformative learning. On top of that, up to 35% of the responses having an equal distribution of agreements and disagreements of the questionnaires, this is classified in band IV. However, there were still students who disagreed with the idea of transformative learning, though only 11% to the total response.

The above results show that, in general, students welcome the idea of transformative learning, with some of them having different opinions on the implementation of the idea. In addition, by grouping the questions into different categories, students' responses on transformative learning may be further divided into several other categories, namely:

   a. Teaching methods compared to other subjects
   b. Personal experiences on the idea / method
   c. The outcome of the concept in personal learning
   d. The outcome of the concept in improving skills or abilities
   e. Observations/evaluations on the lecturer as self
   f. Observations/evaluations on the lecturer towards students

(a) Teaching methods in comparison with that in other subjects

In terms of the teaching methods in comparison to other non-transformative-learning subjects, students agree that the way the subject is taught is different compared to other subjects that they have taken in the past in faculty. This would be a sign where students may start to see the difference in learning, where the idea of transformative learning was introduced, and they try to evaluate the pros and cons between the new learning styles in comparison with the traditional learning. It is observed that up to 79% of students agree that they are asked to study and understand certain parts in the syllabus on their own with the facilitation from the lecturer, rather than the information transferred from the lecturer to students.

(b) Personal experiences on the idea / method

Perhaps due to the reason that this idea is just started to be introduced to the students, although they are happy to see the changes in teaching, some of them may require time to adapt themselves to the idea, as only 63% of the students are happy being asked to learn some of the syllabus on their own. This shows that there are students who still prefer, or are not ready to accept transformative learning, and still prefer rote learning. This is supported by the tendency to disagree with the statement that the teaching method does not really teach student to learn how to learn. Nonetheless, 94% of students have a strong feeling that the ideas of learning how to learn is important from the engineering point of view, as engineering and technology are developing rapidly.

(c) The outcome of the concept in personal learning

In responding to the outcome of the implementation of transformative learning on their personal learning, students think that they on the average agree that they are able to understand the topic better, hence remember longer. At the same time, as much as 62% of them feel that this type of learning method helps them to learn the subject well, leading to more interest in the subject. 68% of the students feel that this learning style helps them to improve their ability to understand the concepts contained in the syllabus of the course. Hence, in a nutshell, students are having mixed opinions in admitting that this new learning style helps in improving their interest in the subject, and hence promote the learning of the subject.

(d) The outcome of the concept in improving skills or abilities

The majority of the students (81%) share the same feeling that if the lecturer only teaches the contents of the course and not motivating students to learn on their own, this will disadvantage students' learning, as new topics and contents are rapidly changing knowledge in this area. On top of that, students feel that this learning style helps to improve their ability to question concepts discussed in the leaning materials that they may not have the chance to do if it was presented by the lecturer. Therefore, they feel that they are ale to express the concept learned and understanding of the concept in their own words.

(e) Observations/evaluations on the lecturer as self

The survey also requests students' responses on the lecturer, on how the lecturer plays his/her role as a facilitator and motivator. Up to 89% of students feel that the lecturer knows his topic better, and able to explain the concepts in comparison with other lecturers; at the same time the lecturer may seem to have lots of practical engineering experience and more concern about students' future careers. This response shows that the lecturer plays an important role in transformative learning, and he needs to understand the topic very well as well as relate each subsection of the topic to the reality so students are able to fit the idea and concepts that they have leaned into real engineering work – this leads to a deeper understanding of the concepts.

(f) *Observations/evaluations on the lecturer towards students*

The last category looks into the roles of lecturers in terms of helping students in achieving a profound understanding of the subject. In general, students feel that the lecturer is more open with the students (94%), and encourage students to engage in question and answer throughout the learning session (95%). Active participation is one of the factors for successful transformative learning, and the lecturers have invited students to actively participate in the class activities. Through this, students get a deeper impression on the session, leading to a better understanding to the subject. In addition, 92% of students are satisfied that the lecturer is more tolerant in the class, and allows the students to ask and challenge them. This encourages the further understanding among students. In addition, in achieving transformative learning, the lecturer has to be in good communication with students and be more sympathetic toward students. Encouraging results show that students agree that their lecturers have the above mentioned potential, although there is room for improvement to achieve a better performance.

The pilot classes were held in the May 2007 Session. Apart from the two subjects mentioned, another subject is added to the list of the pilot classes, which is the Advanced Reinforced Concrete Design for level two students of Civil Engineering. A total of 45 responses were obtained from the three classes. It should be noted that students in May 2007 Session are different from that of the January 2007 Session, hence here the authors are not doing a longitudinal study, where the subject, that is, the number of the students need to be exactly the same. In terms of the reliability of the survey, subjects Quality Assurance and Management and Advanced Reinforced Concrete Design shows an Cronbach α of 0.89 and 0.99, respectively, while the subject of Combustion, Heat and Mass Transfer did not achieve an α of that between 0.7 and 1 due to the number of students, hence the analysis here are looking on students' response on the pilot classes for the former two subjects.

In the pilot classes students are introduced to the concept and the learning outcomes of transformative learning. The activities in the pilot classes include class presentations on a topic of the subject, design of peer assessment criteria for presentation, weekly learning log to reflect the learning of the subject of that particular week.

With regards to the teaching methods in comparison with that in other subjects, more than 80% of the students feel the difference in learning and teaching of the subjects, especially the part where they are required to understand and reconceptualise part of the topics among themselves, and present their ideas to the class. This results show the first response of transformative learning in the lectures, where students should feel the

difference in the learning and teaching style and the main focus of the lecture is now switched from the lecturer to students.

Although students are aware of the change in the teaching and learning method, they are still yet to fully accept the idea of transformative learning, which is shown in the response of students' personal experiences on transformative learning. Only 51% of the students were happy to be asked to learn some of the syllabus on self direction. Nonetheless, they are still looking positively on the subject, where 80% of the students feel that the transformative teaching method teaches students to learn how to learn, and up to 90% of them agree that this is important as engineering and technology are developing rapidly. This is supported by the outcome of the concept in personal learning, where 64% of the students think that transformative learning helps to improve their ability to understand and question the concepts of the syllabus of the course In short, students may realise the importance of transformative learning in engineering, but they may need more time to familiarise with the idea.

The lecturers' role in delivering the course to the students is also an important part in transformative learning. More than 70% of the responses agree that the lecturer is more open to the students, as well as knowing his/her subject better. Most importantly, students have chances to ask and challenge the lecturer in the lecture to provoke deep learning in the lectures, and a better communication between lecturer and students is developed. Encouragingly, a total of 80% of students feel that the lecturer is more sympathetic towards students and tries to help students with their problems.

Looking into the observations on the lecturer as self, a percentage of as high as 93% feel that the lecturer appears to have lots of practical engineering experience, and he/she is able to explain the concepts of the topic better than other subjects. In addition, lecturer is more concern about students' future careers. The survey results reflect the importance of the lecturer as a facilitator in transformative learning. The lecturer not only delivers the syllabus, but has to be interactive and communicative with student, as well as constantly provide feedback to the students. This is so as transformative learning can be regarded as a form of formative learning, where learning happens from the continual reconceptualisation, feedbacks and encouragements throughout the process.

From the analysis it shows that the introduction of the pilot classes in transformative learning in engineering education is indeed a good way to help students to switch from rote learning-acceptance quadrant to the understanding-reconceptualisation of the ideas quadrant, leading to facilitating the application of knowledge in engineering problems.

CONCLUSION

The idea of transformative learning has been introduced in engineering education at the authors' faculty, and three pilot classes have been held using this idea for one semester. The application of Transformative Learning is a win-win move towards intelligent, informed, independent and lifelong-learning human capital demanded by the knowledge society we already live in now.

Results of the surveys conducted on students from these three pilot classes and two previous ones show that there is a strong encouragement for transformative learning in engineering and that advantages were identified.

Full acceptance of the learning style cannot be realized overnight as culture changes are involved both in the students and the lecturers. On the part of students, clearly there is an element of increased effort although the student assumes higher responsibility for their own learning and hence future. They are being trained to understand that they and only they determine their own fate. This learning style is therefore a training ground for real life in future.

On the part of the lecturers, some training and also culture change are involved. In the same way therefore it is unrealistic to expect full acceptance by lecturers in the short time as well. Lecturers will need to be re-trained if little, in the more appropriate way of effective teaching so that s/he will produce graduates who are not only useful to stakeholders and future employers but also and more importantly to themselves as they are trained to become independent individuals with ability to be their own trainers.

It is recommended that more classes using transformative learning style be introduced throughout the university college as the impacts will be more significant when classes in other faculties are run in this manner.

In the longer term, the results of the surveys and the pilot classes provide an early indicator that students are now ready to embark on transformative learning. As a result higher education institutions in Asia are strongly advised to seriously consider this learning style for their own and communities benefit in the region.

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THE WORTHINESS AND EFFECTIVENESS OF MATHEMATICS REMEDIAL COURSES: A Case Study

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ABSTRACT

This study presents a formative model that assesses the worthiness and effectiveness of remedial math courses at a private university in Lebanon. The mathematics remedial courses were evaluated along three strategic features; enrollment, retention, and student academic achievement. The formative model was empirically validated, and findings report that those who had higher than one remedial math course were more inclined not to enroll than enroll. The finding also suggest, those who had one remedial course had higher attrition than retention rates. Finally, achievement in remedial courses appeared to reflect parallel and similar results with the first regular mathematics courses and students' cumulative GPA. The results are significant to the extent that mathematics remedial courses maybe a hindrance to the strategic development of the university and they may be hinderance evidence to subsistent intellectual and academic development. This study is illuminative given few studies have emerged to understand non-regular programs in their universities. The formative model presented in this study could be generalizable to studying the effectiveness and worthiness of courses/programs in higher education.

INTRODUCTION

A large number of North American colleges and universities offer remedial programs, as reported by the National Center for Educational Statistics (NCES, 1996), almost 100% of all community colleges offer remedial courses and 78% of all four year higher education institutions. This picture replicates itself in other parts of the world; particularly in Lebanon, where a robust growth of newly established American-based universities seeking American accreditation and quality assurance has demanded for greater accountable measures in the design, development and assessment of remedial programs by international and American accreditation bodies. As Bers (1985) suggested that there is a substantial demand and need for remedial program evaluation studies in higher education focusing on sound research methods. Thus, this study will focus on a formative evaluation of mathematics remedial programs and will assess the effectiveness and success of the math remedial courses in the enrollment, retention, and subsequent performance of students who took these courses. The significance of this study is that it is the first in its kind in the Middle East and in Lebanon, in the hope that other studies replicate the approach and method that they become penetrative and better available for accreditation agencies and general public, and a standard for formative evaluations of programs. A "remedial program to be judged effective, it ought to help some students succeed who otherwise would most likely fail their college-level coursework" (Zhai & Skerl, 2001, p 3) with the knowledge that mathematics preparation are the most important high school curricular experience to predict college success (Adelman, 1999).

Many students complain that they are required to take the same secondary school mathematics in the university- mathematics- remedial program. However, higher

education policy makers and academic administrators contend that mathematics serve as gatekeeper subjects, and they tend to "sieve" unprepared students out of some careers as in the sciences and engineering (Stage & Kloosterman, 1995; Kull, 1999). Academic administrators also suggest that remedial courses play a role in preparing students for material they do poorly or they have missed (Ottley, 1968). The opposing argument between academic administrators and faculty on one hand, parents and students on the other, suggest that an assessment of the worthiness, and effectiveness of the remedial programs in higher education in terms of what are they accomplishing in preparing students for the regular academic program. The assumptions and rationale for most remedial courses comes from the perspective presented by Hoyt & Sorensen (2001) who explore that high school students are rather under-prepared, face low levels of academic preparation, are generously overrated in high school, and not to par with the academic rigor expected at college. In addition, evaluation of remedial programs may also answer questions to the strategic development of higher education in that remedial should not be an obstacle to retention or lack of enrollment. If prospective students are expected to take more remedial courses than is expected, they are more likely to choose another university to enroll which offers less remedial courses. A formative evaluation model would then help answer concerns made by parents and academic faculty and outline for policy-makers measures of effectiveness for remedial programs.

Research has shown mixed results concerning the effectiveness of mathematics remedial programs. Richardson, Fisk, et. al. (1983) argue that remediation does not advance students into college academic programs, and students who have a number of remedial courses to take, are discouraged to continue or drop-out all together. Those who complete a long list of remedial courses tend to be more motivated students and succeed in the regular program of study.

Early studies found that mathematics remedial did not improve college mathematical abilities through regular college course work or that it did not fulfill the objective it tended to achieve in subjects as English (Lawson, 1959; Ottley, 1968). For instance, a National Study of Developmental Education in the US (Boylan, Bonham, et. al., 1992) found that dropout rates in remedial courses were highest in mathematics, and the National Center for Educational Statistics study corroborated these results to suggest that 74% successfully completed mathematics remedial courses. Saxon & Boylan (2001) conducted a meta-analysis of research and evaluative findings from over 100 studies, which examined the impact of remediation on the GPAs. They found that those who went through the remedial program in mathematics had higher GPAs than those who recommended but did not take the remedial courses. According to Adelman (1995), the mathematical grounding of many remedial college students is so deficient that a high failure rate exists *even* in the remedial classes. In the same study, those who completed the remedial courses had slightly higher and non-significant core curricular English courses compared to those who did not go through the remedial program. Johnson & Kuennen (2004) have shown that remedial courses taken before subject-curriculum, had students perform better on the latter courses than those who took the courses concurrently with remedial ones.

Empirical evidence in the US suggest that remedial, placement preparation and college support programs in colleges show some success in degree attainment (Cabrera & La Nasa, 2001; McCabe 2000 cited in Brothen & Wambach, 2004). Students in remedial programs are more likely to persist in college than those who were not required to take

courses (Bettinger & Long, 2005). Schoenecker, Bollman, et al., (1998) comparison of those who completed remedial courses with those who do not, found that those students who completed the recommended remedial courses, were less apt to continue with the program of study. Even those who do enroll in calculus courses, without the remedial courses, 40% fail these courses (Wieschenberg, 1994). Richardson, Fisk et. al. (1983) argue that students who do enroll in regular courses without the remedial prerequisites often force faculty to water-down the curriculum so as to accommodate low achievers. Current research has drawn the pros and cons of remedial programs, but still the question of policy and effective remedial programs is stipulated rather than answered rigorously or empirically.

The authors are not aware of one study that evaluates "pre-university programs" in the Middle East. Even in the US research about the effectiveness of remedial education programs has typically been sporadic, under funded, and inconclusive (Bers, 1985). For instance, a study of 116 two- and four- year colleges and universities revealed that only a small percentage conducted any systematic evaluation of their remedial education programs (Weissman, Bulakowski, et. al., 1997). Research literature as that presented by Roueche and Snow (1977) cited in Bers (1985) reviewed programs of 139 public community colleges and 134 universities found that these universities related the success of remedial programs to student completion of the program i.e., retention. In addition, they found that student success was a function of faculty and staff involvement and caring for students to persist in programs. More recently, Zhai & Skerl (2001) conducted a comprehensive study on the effectiveness of remedial at a four-year institute in the US and found that remedial courses were effective in that they increase the success in regular courses and subsequently in the retention, and high graduation rates. There is currently questionable practice as to what makes the best remedial program. Keeping in mind there is no empirical and formative based evaluation studies that provide models to identify and examine the success of remedial programs in other parts of the world.

With this in mind, this evaluative/research, paper suggests a basic model and approach to evaluating remedial programs in Lebanese universities and elsewhere. The implied model has three basic components established along strategic principles and issues that address the effectiveness of remedial programs and whether they are achieving their purpose in helping students advance in higher education, the model has three basic components, these are: 1) increased *enrollment; 2) retention and 3) better performance in subsequent mathematics courses and overall academic progress.* The three modules can formally upraise, remedial programs at colleges and universities. As modules have theoretically substantiated (see above literature review), become guiding nodes that can critically examine the effectiveness of remedial programs.

Research Questions

A number of research questions will be answered through this study. Question to what extent do mathematics remedial courses taken, hinder students from enrolling at the university? Second, to what extent those assigned in remedial courses enroll at the university, remain or dropout all together i.e, those that take more than one or more remedial course are they more apt to stay or leave the university? Third, are remedial

courses effective in preparing students for their required college-level mathematics course? Fourth, do the mathematics remedial courses reflect generally a better overall academic performance i.e, grade point average (GPA)? Particularly, those who go through remedial courses do they have an overall better performance in degree courses than similar students who do not?

METHODOLOGY

Several cohort data from within subgroups were groups obtained from the student enrollment database from a private's university's Administrative Computer Centre in Lebanon. Data obtained for students for both those who enrolled and the none-enrollees to the university. The type of data accrued was related to the number of remedial students take at the university. A maximum of three remedial math courses could be taken before enrollment in regular programs. Data pertaining to those who did not enroll included their entrance exam scores, and the type and number of mathematics remedial courses that were required. The basic design, crossed the number of remedial courses with a number of variables that helped answer the research questions. In the first analysis for instance, we compared those enrollees with those non-enrollees, to determine whether those who choose to enroll at the university had higher or lower number of mathematics remedial courses than those who did not. Second, we wanted to find out whether the number of remedial courses taken by students was related to student retention variable i.e., attrition and retainment. Third, to determine the effectiveness of the mathematics remedial courses on subsequent courses and general academic performance. Student enrollees were fit into cohort groups for those who took zero remedial, one remedial, two remedial, and three remedial courses were crossed with their performance on the first mathematics course and cumulative GPA. Lastly based on the average grades on the mathematics remedial course, three cohort groups of remedial students were classified as low achievers, middle achievers and high achievers as to cross these levels with their GPA and the first mathematics course grades in that order.

Sample

All students accepted who either enrolled or did not enroll to the university were selected for the study. The sample size came to 8587 who applied then enrolled or did not enroll. Those rejected were not included in the data set. The data was accrued from 2000/2001 to 2005/2006 academic years. Substantive reorganisation and restructuring of the data was performed to establish a multifarious cohort and subgroups. Graduate students applying to the university were not included in the sample data.

RESULTS

The first analysis determined whether placement in the number of remedial courses had an effect in determining the level of non-enrollment into the university. A count was calculated for the number of students in remedial courses, and crossed with enrollment status (whether they enrolled, or did not enroll at the university).

Table 1 reports the percentages of the non-enrollee and enrollee classifications. The results indicated a significant difference between non-enrollees and enrollees (χ^2(3, 8587)

= 106.86, p < .0001). Surprisingly, those who had one remedial math course had a significant and high number of none enrollees than those who matriculated or enrolled. This differences appears for those who tookone remedial course with a percentage of 22.4% (none enrollees) compared to 4.55% (matriculated). In the second analysis, we reclassified the number of remedial courses into those who took one or more mathematics remedial courses with those who took zero remedial courses and crossed it with enrollment status (enrolled/not enrolled). A significant Chi-square was found ($\chi^2(1,$ $8587) = 35.23$, p <0.001), for those who were not required to take mathematics remedial courses enrolled at a higher percentage 59.9%, compared to 52.1% who did not enroll. However, those who had one or more math remedial course to take had a higher probability of not enrolling at the university compared to those who enrolled (40.1%). Thus, a conclusion that math remedial courses at general and minimal level, do provide some sort of barrier to student enrollment at the university.

Table 1 Frequencies and percentages for enrollees and non-enrollees in none remedial and mathematics remedial courses

		Number of Remedial Courses				
		0	1	2	3	
Did not Enroll	Number	898	387	364	76	1725
	Row %	52.1%	22.4%	21.1%	4.4%	100.0%
	Column %	17.9%	18.7%	27.7%	38.8%	20.1%
	Percent of the Total	10.5%	4.5%	4.2%	.9%	20.1%
Enrolled	Number	4113	1678	951	120	6862
	Row %	59.9%	4.5%	13.9%	1.7%	100.0%
	Column %	82.1%	81.3%	72.3%	61.2%	79.9%
	Percent of the Total	47.9%	19.5%	11.1%	1.4%	79.9%

In the third analysis, we controlled for only those who matriculated, using the number of mathematics remedial courses, those who took zero, one, two, and three remedial courses with a attrition/retention variable. We were interested to find if there was a relation between the number of math remedial courses required and whether it had a direct link with attrition or retention. Table 2 presents the percentages of those who took mathematics remedial courses crossed by the retention variable. The analysis showed that those students who took three remedial courses had lower attrition rate of the total (0.2%) compared to those who were retained (1.5%) with a significant $\chi^2(3, 6862) = 21.03$, p <0.0001. Generally, this relation appeared across the various number of mathematics remedial courses taken. In the fourth analysis to this study and in line with Grubb (1998) and Boylan, Bonham et. al. (1994), to examine the dropout percentages of those enrolled in remedial courses. We created a cohort group of those who had taken zero mathematics remedial courses in one group and one or more mathematics remedial course in another. We then crossed this newly constructed variable with the retention/attrition variable; a significant and high relation appeared ($\chi^2(2, 2749) = 14.29$, p <0.001). Generally, those who had to take one or more remedial course, the attrition rate was at 47.5% compared to those who were retained 39.6%. However, an inverse

relation appeared when comparing those who were not required to take mathematics remedial courses with those who were required. The attrition was at 52.5% compared to a retained 60.4%. Mostly students who finished the first remedial were prone to dropout than to be retained.

Table 2: Frequencies and percentages for the leavers and retained in none remedial and mathematics remedial courses

		Number of Math Remedial Courses				
		0	1	2	3	
Attrition	Number	662	345	142	17	1166
	Row %	56.8%	29.6%	12.2%	1.5%	100.0%
	Column %	16.1%	20.6%	14.9%	14.2%	17.0%
	Percent of the Total	9.6%	5.0%	2.1%	0.2%	17.0%
Retained	Number	3451	1333	809	103	5696
	Row %	60.6%	23.4%	14.2%	1.8%	100.0%
	Column %	83.9%	79.4%	85.1%	85.8%	83.0%
	Percent of the Total	50.3%	19.4%	11.8%	1.5%	83.0%

The fifth analysis determined the impact of remedial math courses on student performance in their first mathematics course and cumulative GPA. The design crossed the number of mathematics remedial course (i.e., zero and one or more remedial courses) by the first math course in the regular program and cumulative GPA for the enrollee cohort group. A significant difference was found between those who did not take remedial course, and those who took one or more on the first math courses (t(df=4917)=9.17, p<0.0001). A t-value test conducted to study the same effects of the number of remedial course on cumulative GPA. The difference (t(df=6447)=25.25, p<0.00001) on the cumulative GPA for those who took zero remedial courses was higher than those who took one or more. The means are reported on Table 3. A significant and high positive correlation appeared for the average remedial grade and first math course at (r=0.85, p<0.0001). In general, the results show that those who have not taken a remedial courses have had a higher cumulative GPA, however, those who had one or more mathematics remedial course had a higher average than those who had zero or no mathematics remedial courses to take.

Table 3: Means on the first math course and cumulative GPA by those who took zero remedial courses and those who took more than one remedial course

	Zero Remedial Courses			More than One Remedial Courses		
	N	Mean	SD	N	Mean	SD
First Math Course	2241	2.31	1.23	2678	1.98	1.22
Cumulative GPA	3825	2.70	0.64	2624	2.30	0.6

The sixth analysis investigated whether zero, one, two, or three mathematics remedial courses had any direct affect on their performance in the first math course and their cumulative GPA. Table 4 reports these results. We created four cohort groups those who enrolled into zero, one, two, and three remedial courses, then ran a one way ANOVA to see if any differences existed between the four groups. A high significant difference was found $(F(3,4915)=65.28, p<0.0001)$ on the first math course. A Scheffe' post-hoc analysis between the four groups showed differences among all combinatorial groups. The highest was for those who took three remedial courses, followed by those who took zero, two and lastly one remedial courses. On the GPA, a significant difference was found $(F(3,6445)=212.83, p<0.0001)$, the Scheffe' post-hoc analyses reports a no significant difference between those who took one and two, one and three, and two and three remedial courses. However, a significant difference appeared between those who took zero remedial courses with those who took one, two, and three respectively. The results in general indicate that the more mathematics remedial courses students take, impacts negatively first math course performance that students take in the regular programs. However, those who took zero remedial courses had higher cumulative GPA than those who took one, two, or three remedial courses. The higher the number of remedial courses students take, the lower the cumulative GPA.

Table 4: Grade point average means of remedial courses crossed with the first math and cumulative GPA

	Zero Remedial	One Remedial	Two Remedial	Three Remedial
	Mean(SD) N			
First Math Course	2.31(1.23)	1.79(1.31)	2.22(1.02)	2.64(0.97)
	N=2241	N=1610	N=948	N=4919
Cumulative GPA	2.70(0.64)	2.30(0.63)	2.29(0.54)	2.27(0.49)
	N=3825	N=1560	N=938	N=120

Table 5: Means and F-Ratio of the average grade level crossed by the first math and cumulative GPA

	First Math Course	Cumulative GPA
	Mean (SD) N	
Low Achievers	0.95 (1.0) N=1130	2.08(0.60) N=1080
Middle Achievers	2.4 (0.56) N=947	2.34 (0.51) N=941
High Achievers	3.29 (0.55) N=601	2.66 (0.53)597
	F(df)	
	1988.89 (2,2675)**	219.15 (2, 2615)

A high correlation between the average remedial grade and the first math course appeared, where a significant correlation between average remedial grade and cumulative GPA, indicate that a relation may exist between the course content of the math remedial

courses and the first math course. It may also say that remedial courses have little effects on other courses in the regular program and that remedial math course have merely "short-term returns" rather than lengthened affects on the intellectual development of the typical college student. So, in order to determine what may be already prevalent in our data but not evident was to investigate the levels of achievement on these remedial courses on the first mathematics course and cumulative GPA. We created three cohort groups, those who received grades less than a C (low achievers), a group who received a grade between C and B (middle achievers), and a third group who received a B and above (high achievers) on the average of the remedial course(s). A separate one-way ANOVA was run on the first math course and on the cumulative GPA. Table 5, reports the means and the F-ratios. A Scheffe' post-hoc analysis produced a significant difference between all combinatorial groups with higher mean ratings for those who were high achievers on the mathematics remedial courses followed by the middle achievers and lastly the low achievers.   The higher achieving students had the highest first math course and cumulative GPA average. Conversely, those who received lower grades on the remedial courses had the lowest grades on first math and cumulative GPA respectively.

DISCUSSION

In our review of the literature, we found few studies that examine the effectiveness of remedial programs. Particularly, we found not one study that assessed remedial courses in relation to enrollment into a program. In this paper we proposed a model to asses the effectiveness of remedial programs. We also examined this model in a sequential and modular approach in establishing an applicable, appropriate and concurrent formative evaluation model for the assessment of remedial program. The model conceptualized in this paper follows a three-module approach discussed in the introduction section (*enrollment, retention, and performance in subsequent subject matter courses and overall academic progress).* The model was coursed at a private university in Lebanon, in the hope that such model becomes recognizable and easily applicable for programs along the lines of institutional self-assessment studies.

One of the major finding of this study presented the relation between the number of math remedial courses students where placed in, and whether they enroll or do not. Particularly, those who had three remedial courses were less apt to enroll at the university than enroll. Thus, it would be advantageous for future studies to understand whether remedial courses act as obstacle or an opportunity to enroll and continue in regular programs. The results also show that number of remedial courses has a direct relation with students remaining or leaving a university i.e., retention. Particularly those who had one remedial math course were more inclined to dropout than stay enrolled. In a large US study by Boylan, Bonham, et. al. (1992) they found that dropout rates in remedial courses were highest in math which created problems and difficulty in interpreting the dropout rates in regular programs. Grubb's (1998), data from the City University of New York (CUNY) system indicated the attrition rate was close to 40% in remedial courses. The National Center of Educational Statistics in review of community colleges in the US pointed to a 74% retention rates in remedial math. Grubb (1998) pointed out that high dropout rate in remedial courses was one of the major problems in evaluating the effectiveness of remediation; however, this limitation is a point worth of study in that we

found that remedial courses had a direct relation between students attrition and retention. Perhaps, these students found that their first remedial was so challenging that they could not foresee themselves making it through regular program in college and decided to dropout rather than go through a rigorous academic work.

The third and more important finding as to whether math remedial courses generally improve student performance on the mathematics subjects and others alike. This particular proposition drawn from Yoram, Siadat, et. al. (2000) that remedial courses benefits outweigh the costs and improve academic performance, general skills, employment, academic and life goals. But, if remedial programs are to place some sort of barrier to student enrollment they only provide improvement in mathematics courses, which suggests that the locus of benefits are extremely localized and thus only serve students, in the short run, as in their first mathematics courses that they take in college. This particular finding corroborates that of Boylan, Bonham, et. al. (1992), which surveyed students from 150 colleges in the US and found that those who passed their math remedial courses were to benefit and perform at an acceptable level in their first college-level course. The findings in this study showed that students who took two or more mathematics remedial courses performed better on their first math, than those who took one or none at all. Particularly, those who took three remedial courses were to benefit the most as they scored higher than those students who had zero remedial courses. However, on the cumulative GPA students who took three remedial courses had the lowest cumulative GPA, followed by those who took, two, one, and zero, in order. Thus, this particular finding is significant in that the level of academic achievement among those who enroll with out remedial courses appears to be the highest. Even if those students so poorly prepared register in remedial programs have done little to the overall student performance. As Weissman, Bulakowski, et. al. (1997) indicated that the purpose of remedial courses is to gain skills necessary to complete in regular programs in college- our results showed that the more remedial courses students take the lower the cumulative GPA. These results also corroborated with Weissman, Silk, et. al. (1997), who found that the average GPA for the remedial students was not as high as that of college-ready students. This is significant because these courses show that they may be not doing what they set out to do and thus fail to be effective in providing extensive and comprehensive academic preparation for entering college students in a private university in Lebanon.

In our final analysis, we attempted to investigate whether success in courses was related to the more logical and evident factor as educational achievement. By establishing three groups; low, middle and high achievers, it was found that those low achievers on remedial courses performed poorly in the first course in the regular program and on their cumulative GPA. Similarly, those who were high achievers in remedial courses were the high achievers in the first mathematics course and on their cumulative GPA. This finding corroborates to that of Weissman, Bulakowski et. al. (1997), who found those students who performed well above the average grade in remedial courses did not perform to par with those who did not take remedial. Remedial students do tend to do poorer than those who do not go through such programs and those who do not perform higher than those who did not go through remedial courses. These findings are substantial and informative in that those students who are high achievers tend to perform well anyway, irrespective if

they take remedial courses or not. It could be concluded that mathematics remedial courses, have little effectiveness in promoting academic success.

In conclusion the results of this study indicate that students with more mathematics remedial courses place little barriers to enrolling students to a University. For instance, those who were assigned three mathematics remedial courses had a higher probability of not enrolling than attending the university. Those who had one remedial course were more inclined to dropout than stay at the university. In terms of effectiveness, those who enrolled and were not required to take remedial courses performed higher than those who had one or more remedial courses on their first math course. However, analyzing those who took one or more remedial course, we found that those who took three remedial courses garnered higher grades than those who did not take remedial courses in their beginning mathematics course. This result can't be generalized to how students did in other courses in their regular program. In fact, those who did not take remedial were prone to have a higher grade point average than those who did. These findings are substantial and informative in that those students who are high achievers tend to perform well anyway, irrespective if they take remedial courses or not. It could be concluded that mathematics remedial courses are ineffective in promoting academic success further needs call for the need to examine the palpability of remedial programs locally and internationally.

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THE EFFECT OF ENHANCING NURSING STUDENTS' KNOWLEDGE OF THE NURSING CARE OF LUNG CANCER PATIENTS BY USING COMPUTER ASSISTED INSTRUCTION LESSONS

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ABSTRACT

The objective of this quasi-experimental research was to investigate the effect of enhancing nursing students' knowledge of lung cancer patients by using Computer Assisted Instruction lessons. The subjects were 49 randomly selected first and second year nursing students. The findings showed that the effectiveness of CAI on the knowledge of nursing care of lung cancer patients was $E1/E2 = 75.5/82.85$. The students' knowledge of the nursing care of lung cancer patients increased significantly after studying the CAI lessons ($p < .001$). The average length of time for using the CAI lessons was 60.10 minutes. The students indicated a high level of satisfaction and perception of CAI quality. The results indicated that Computer Assisted Instruction Lessons could facilitate students' self learning efficiency.

BACKGROUND

In general, learning and teaching management have been teacher centered in class lectures. Students can learn by following visual media and listening to a teacher. If they cannot understand a present lecture, they may not be able to link its contents to the previous lecture. Because of limitations of time and difference learning abilities, students become bored and lose their ability to self evaluate the outcome of learning. So nowadays, management of teaching and learning aims to change teacher centered modalities to be student centered so that students can gain knowledge according to their own ability.

Computer Assisted Instruction (CAI) is a method applied to self - directed learning. The program is designed so that the learner can respond to the lesson media in two ways: he/she can choose study contents and play back to previous lessons for more understanding and to link with the present lessons; students can also self evaluate the outcome by immediate feedback. In this way students can use CAI at any time and at any place. Thus CAI has been beneficial for expanding academic opportunities to distant rural areas. Academic institutes that can access every item in the course outline. Each subject has many items and a large amount of contents but time is limited. CAI lessons one more efficient if the learner tests himself/herself directly. Thus knowledge of the nursing care of lung cancer patients has been modified in to a program of CAI lessons for supplementing knowledge in the subject of adult and elderly nursing care I, especially if an item is lacking a lecture on cancer because of limited time.

The objective of study

1. To compare the progress of learning achievements prior to and after learning from the Computer Assisted Instruction lessons for nursing students.

2. To study the efficiency and quality of Computer Assisted Instruction lessons on enhancing the knowledge of nursing care of lung cancer patients.

3. To study the satisfaction level and length of time to learn Computer Assisted Instruction lessons on knowledge of nursing care of lung cancer for nursing students.

The research framework

This research was base on Skinner's theory (Skinner, 1954) describing the relationship of the learning process between action and the outcome of reaction. The response of the learner was linked to stimulus. The learning process would be successful when the instructor could arrange lessons for learners to do until they achieved their satisfaction. If the teacher is to "transmit knowledge," "cultivate skills," "evoke ideas," or "change attitudes," neither he nor the student is likely to have any clear evidence that a change has occurred (Skinner, 1978). After learning the contents of a CAI lessons, a learner self evaluates by feedback outcome from doing exercises with rewards in the right answers. Feedback can operate to influence further behavior (Dicken; Saunders; and Stringer, 1993) Thus, CAI could contribute knowledge about the results of performance, generated motivation, and provide reinforcement, thereby strengthening the behavior of self learning in the future. The framework of this research is shown in a modified form diagram below:
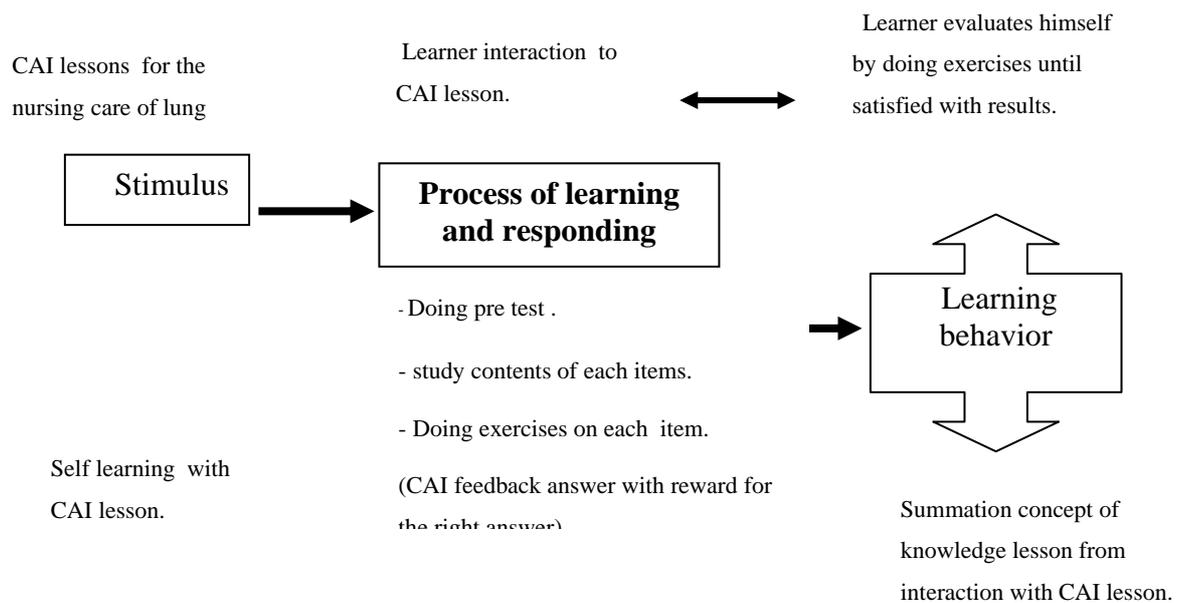
Hypothesis of the research The scores after learning with Computer Assisted Instruction lessons on knowledge of nursing care of lung cancer patients by nursing students are higher than scores before learning.

Beneficial aspects

1) Nursing students gain the knowledge of nursing care of lung cancer patients through self directed learning.

2) To implement knowledge from CAI to make a care plan in clinical practice.

3) To enhance the self directed learning efficiency of nursing students.

4) To determine the way for constructing other CAI lessons.

REVIEW OF THE LITERATURE

Self - directed learning (SDL) means independent learning according to the needs and ability of learners. They self regulate the process of learning, have the autonomy to choose their own learning experiences, perceive their own work and critique their works with reality (Luecha, 1993). In terms of learner independence, the learners study and search out knowledge from media prepared at the Learning Centre of their institutes. They can choose to do or practice their work as needed, according to their interested and abilities, either alone or with friends (Ra-ngubtook, 1999). Beneficial self learning implementation assists the learners to develop knowledge and wisdom. They can solve problems, adapt to modern and creative thinking for the development of mankind, to bring about happiness resulting in greater security.

Learning theory, based on Skinner, B.F. (1954) described the association between action and reaction, the response of the learner was associated to a stimulus. Learning took place when the teacher provided learning programs to learners that satisfied them. The theory that described learning behavior was the "Operant Condition" (Skinner, 1954 cited by Muttiko, 1993). This concept, dependent on receptivity had two characteristics: positive reinforcement and negative reinforcement. Method, such as using rewards for the right answers of CAI lessons, including using psychological approaches as much as possible, stimulating the challenge of learning and opportunistic learners' getting immediate responses. The experimental analysis of behavior has suggested powerful alternatives through the use of positively reinforcing consequences. The beginning of contents in the program lessons should be simple, easy to understand and without mush detail because to put it roughly, the student can be given positive reasons for doing the kinds of things which will advance his education (Skinner, 1978).

Computer Assisted Instruction is a media packaged program and lessons using computer which are applied to self learning. Although learners have individual differences, they can achieve their learning objectives with this computer program (Muttiko, 1993). The three components of CAI are: 1) a computer which maintains an input unit system, processing unit and output device. 2) CAI lessons packaged so as to display the contents of a lesson to the learner via the monitor. And 3) the learner is the most important element to compile contents of lessons affecting 3 sub systems in his body (perceptual system, motor system and cognitive system) (Udomrat, 1994).To design a CAI lessons the 3 steps should be recognized (Rodpothong, 1992). They are 1) Analysis of the course outline and contents; 2) Setting objectives of program lessons and 3) Introduction the boundary of lessons associated to objectives of the program lessons including learning activities. The designing of CAI lessons should be aware of arrangement of contents, layout contents, screen graphic and results of learning activities. Designing CAI lessons should include methods 1) to gain attention, such as picture graphic design, color, movement and sound; 2) to stimulate active relevant knowledge for revising previous

knowledge; 3) to present new information and separate lengthy information into sub themes; 4) to use cues to emphasize important words. The contents should be suitable for the level of learners; 5) to guide learning in the form of cognitive thinking, analysis and to determine new contents based on formerly experience; 6) to elicit responses during learning (such as choosing or printing answers); 7) to provide feedback to learners for reinforcement; 8) to assess performance for the evaluation of learning; and 9) to promote retention of new knowledge and essential knowledge.

Cancer is one of the more serious health problems in our world. In Thailand, it has been found that lung cancer is the second major cause of death in both male and female cancer patients (The Institute of Public Health Policy, 2001). Thus, the knowledge of nursing care of cancer patients should be included in the subject of nursing sick adult and elderly I in the second year undergraduate nursing program at Prince of Songkla University. There are many studies on this subject, including a variety of cancers. But knowledge of nursing care of lung cancer patients was no topic on it included in the course outline. For self learning, A CAI lessons could be created for this topic.

The CAI lessons for the nursing care of lung cancer patients used in this research was in Thai and showed that it was for nursing students on the title page. Also it was suggested that the display be adjusted to 800 x 600 pixels on a full screen. The introductory page would be shown after the student enters her name. The next page showed step by step method of learning. Following that, the students would go to the story board which composed of 1) a pretest summation of the knowledge and care of lung cancer, 2) the definition of lung cancer, 3) the impact of lung cancer on health, 4) the treatment of lung cancer, 5) nursing care of lung cancer patients, and 6) a posttest summation which was parallel to the pretest. The extensions of the end showed items of reference information on instructors, and acknowledgements. While a learner did each exercise she got positive reinforcement by seeing a word of praise and a picture reward, such as picture of flowers when the right answer was chosen. Moreover, the rational explanation of the right answer showed up promptly on that page. If a wrong answer was chosen, "choose again please" would popup reminding her that she had the choice to choose a new answer or back to the earlier section and study again. Every item contained exercises which were modeled on the pretest and posttest (multiple choices, choosing one out of five answers).

CAI experimental research thesis from the faculty of education in Thailand, published from 1996 to 2000, Mostly reported the scores of the experimental group were higher than the control group and that CAI was significantly more effective than any other teaching method (Auea-saman, 2005). Also in Thai nursing students, for example their knowledge of complicated diabetes patients (Sa-ard, 1996), positioning techniques and the body mechanics of patient (Visatgul, Aree; & Tontisirin, 2004), sexuality in the elderly (Lungkapin, 2001), were enhanced the result of all studies showed that the knowledge of nursing students after learning with CAI (in a group and compared to the control group) increased significantly ($P<0.05$-0.01) in the experimental group. Thus, CAI lessons should be tested by learners before propagating it for increased efficiency and raising the quality of media instruction

RESEARCH METHOD

This research was quasi-experimental for studying the effect of using CAI lessons to promote the knowledge of nursing care of lung cancer patients by nursing students. The fifty nine subjects were first- year nursing students (continual curriculum) and second-year nursing students of the Faculty of Nursing, Prince of Songkla University, academic year 2006. Simple random sampling was used for the experimental group. (10 subjects for were used as a instrument test group before using 49 new subjects in experimental group.) The research instruments were composed of three parts: 1) CAI lessons on the knowledge of nursing of lung cancer patients, constructed by the author ware program version 6.5 by the researcher validated by 4 experts (a pulmonary physician, specialist nurse in the respiratory care unit, nursing instructor, and educational technology instructor). 2) A CAI satisfaction questionnaire composed of 9 items that applied measurements to 4 levels of satisfaction on the check list (very high = 4 points, high = 3 points, medium = 2 points, and least = 1 point). It was tested with the Chronbach's alpha coefficient, reliability 0.896. This questionnaire included a time record before starting to do the pre test and time after doing post test in CAI lessons with uncontrolled time. 3) A CAI quality questionnaire based on Heiench, R (1985) translated into Thai by Peeravud, J.(1999). This questionnaire was composed of 9 items and had measurements to 4 levels on the recommend check list (high = 4 points, medium = 3 points, least = 2 points, and renewable = 1 point).Tests were done with the Chronbach's alpha coefficient, reliability 0.717.

Process of data collection

In learning with CAI, volunteer subjects needed to learn and be prepared to join the group. The environment of the computer room was not designed for experiments. During experimentation, other students came to use computers as well. 3-14 volunteer subjects came to do experiments each time. The time period of data collection was 3 weeks because they had to work at a convenient time and each researcher's time for experiments was different. However, after finishing the experiments they promised not to tell about the test to other subjects. The target number of subjects was 50 but only 49 subjects were available because all the second year nursing students had gone a meditation retreat for 1 week.

Collection steps of data: 1) Researcher appointed subjects depending on their free time for experimentation.2) Subjects signed up their names and received questionnaires before entering the computer room and used the CAI lessons one by one. 3) Subjects and the researcher together recorded the time on the questionnaire before beginning the CAI lessons step by step following instruction. 4) Subjects did 20 pretest questions. The scores showed immediately after doing 20 questions were finished. 5) Subjects wrote their pretest scores on the questionnaire, which was also checked by the researcher. 6) Subjects started to learn contents and did exercise of each item 7) after finishing each item, they did a posttest which composed of 20 questions parallel to the pretest. Also CAI would show summation scores immediately after the 20 questions were done. The researcher rechecked score and times together with them before wrote on the questionnaire. 8) Subjects expressed their opinions in the CAI satisfaction and CAI quality checklist and gave all the questionnaires to the researcher.

DATA ANALYSIS

This quasi-experimental research was to investigate the effects of using CAI lessons for the knowledge of nursing care of lung cancer patients by nursing students. The presentation of data analysis and discussion were separated into 5 parts 1) analyzing CAI efficiency, 2) comparing knowledge scores before and after learning the CAI lessons, 3) the subjects' satisfaction scores after taking CAI lessons, 4) looking at the quality of CAI lessons scores from the subjects' point of view, and 5) How long subjects took to study CAI lessons. The result of analysis showed that: 1) The efficiency of CAI lessons on nursing care knowledge of lung cancer patients of the instrument test group (10 subjects) showed $E_1/E_2 = 70/80$. Then, CAI lessons after taking it the efficiency of CAI on the knowledge of the experimental group (49 subjects) showed $E_1/E_2 = 75.5/82.85$. 2) The mean scores of the students' knowledge of nursing care of lung cancer patients after the experiments on the instrument test group and the experimental group were significantly higher than the mean scores before the experiment ($P< .001$) table 1 and 2

Table 1

knowledge mean score	Range	Mean (n= 10)	SD	T	Sig 2-tail
Before learning	7-11	9.70	1.251	-18.806	.000
After learning	14-18	16.00	1.155		

P< .001

Table 2

knowledge mean score	Range	Mean (n= 49)	SD	T	Sig 2-tail
Before learning	5-15	10.00	2.00	-18.715	.000
After learning	13-16	16.571	1.594		

P< .001

3) Mean score, Standard Deviation, and percentage of CAI satisfaction of 59 subjects (including instrument test group and experimental group) were very high (91.855%) table 3

Table 3

CAI satisfaction	Level of satisfaction (n)			Mean score	SD
	Most highly (score=4)	High (score=3)	Medium (score=2)		
1. The accuracy of contents	71.2%(42)	28.8%(17)	0%	3.711	.457
2. The completion of contents	71.2%(42)	28.8%(17)	0%	3.711	.457
3. The continuing of contents	62.7%(37)	37.3%(22)	0%	3.63	.489
4. Suitability of contents	64.4%(38)	35.6%(21)	0%	3.644	.483
5. Usefulness for application	76.3%(45)	23.7%(14)	0%	3.762	.429

6. Stimulus to learning	69.5%(41)	30.5%(18)	0%	3.69	.464
7. Easily understood	66.1%(39)	33.9%(20)	0%	3.661	.477
8. Ability to self learning	76.3%(45)	23.7%(14)	0%	3.762	.429
9. Appropriate length of time	52.5%(31)	44.1%(26)	3.4%(2)	3.491	.568
Sum of frequency	360	169	2		
(n) X (score value)	1440	507	4		
Total score	1951				
Percentage of total score (full score = 4x9x59) 2124	91.855%				

4) The subjects' opinion of CAI quality showed highly mean scores of each item of questionnaire. (means range 3.6-4, SD .000-.516). table 4

Table 4

The comments on media quality	Subjects	mean	SD
1. Consistency of goals	instrument test group (n= 10)	4.00	.000
	experimental group (n = 49)	3.82	.391
2. Academic quality	instrument test group (n= 10)	4.00	.000
	experimental group (n = 49)	3.918	.277
3. Quality of techniques	instrument test group (n= 10)	3.80	.4216
	experimental group (n = 49)	3.734	.446
4. Easy interaction for the learner	instrument test group (n= 10)	4.00	.000
	experimental group (n = 49)	3.837	.373
5. Learner's control of learning speed	instrument test group (n= 10)	3.40	1.265
	experimental group (n = 49)	3.77	.421
6. Interaction and reinforcement	instrument test group (n= 10)	3.70	.483
	experimental group (n = 49)	3.69	.466
7. Choice of lesson according to ability	instrument test group (n= 10)	3.90	.316
	experimental group (n = 49)	3.75	.434
8. Prevention to miss pressing the button	instrument test group (n= 10)	3.70	.483
	experimental group (n = 49)	3.63	.487
9. Display of interesting graphics	instrument test group (n= 10)	3.60	.516
	experimental group (n = 49)	3.69	.465

5) Frequency and duration of CAI lessons (including pre test and post test) was 56-60 minutes and the average duration time for taking a learning CAI lessons for all subjects was 60.10 minutes.

DISCUSSION

The results were described in 5 parts:

Part I: Analysis the efficiency of CAI lessons on increasing knowledge for the nursing care of lung cancer patients. The CAI was tested for efficiency by 10 nursing students in order to find out their needs. The examined efficiency was 70/80 and was lower than required criteria. Then the CAI was improved before it was applied. After checking, E1/E2 the experimental group (n= 49) results were 75/82.85 showing that efficiency had increased. The improvement CAI making it clearer and easier to understand lead to enhanced media efficiency. Active learning could be motivated by using CAI multimedia technology composed of attractive graphic. This made self learning for more enjoyable and promote good attitude (Lungkapin, 2001).

Part II: The comparative scores on knowledge of nursing care of lung cancer patients before and after learning CAI lessons. The result showed that the mean scores after the experiment with the test group and the experimental group were significantly higher than the mean scores before the experiment (p< .001). The analysis results supported self learning by using CAI lessons for enhancing the knowledge of nursing care of lung cancer patients to solve the problems of teaching and learning process as in the course outline of nursing that has numerous sections and a great deal of contents. By increasing property computer efficacy, organizing the contents property, and enabling two ways communication during lesson exercises, the students could repeat the previous lessons as needed. Thus, learning with CAI lessons could change passive learning (teacher-centered learning) to active learning (student-centered learning) by considering individual differences in meeting the objectives of teaching and the learning process. The results of this study were consistent with many studies in nursing (Tonipipat, 1998; Lungkapin, 2001; Visatgul, Aree; & Tontisirin, 2004).

Part III: Nursing students satisfaction of CAI lessons for the increase knowledge of nursing care of lung cancer patients. The 59 subjects' opinions of CAI showed a high level of satisfaction of all aspects that can be summarized as 91.855% (mean 3.673, SD .472). The area of CAI satisfaction scores covered the following: appropriateness, completeness, continuity, suitability, beneficial application. Included also was satisfaction with technique (learning stimulus, ease of understanding, ability to self learning) showing high scores. 2 subjects (3.4%) selected "fair" on the satisfaction check list for length of time because this CAI has long lessons. Thus, the satisfaction with the length of CAI lessons was less than that any with other area. Possibly, CAI lessons were presented more attractively than teaching documents, leading to good attitudes brought about by stimulated learning (Lungkapin, 2001).

Part IV: The result of surveying subjects' opinions on the quality of CAI lessons for increasing knowledge of the nursing care of lung cancer patients. The result of the study showed quality modality of the CAI score to be high to very high for each dimension in the instrument test group (mean 3.40-4.00, SD 1.265-0.000) and the experimental group (mean 3.694-3.918, SD .466-.277). Consequently, the quality of media can be measured from learners' opinions. The CAI lessons of nursing care of lung cancer patients were constructed to cover the main concepts of nursing knowledge which students could compare to the objectives of other courses (as in the nursing care of adult and elderly clients I) in the class lectures training. Each part of a CAI lesson of this research covered the main concepts of nursing care training knowledge, with suitable and easily

understood contents in Thai, including pictures and color that help students not get bored. Also taken into consideration were immediate technical responses giving positive reinforcement of correct answers with a word of praise, a virtual bouquet flowers, and a description of the right answer. By observation, it was found that subjects enjoyed it when they were reinforced with the right answer. Thus, they felt challenged to go on to do the next question. It was consistent with Skinner's belief that a learner learned better if he knew his answer was right.(Fine, 1962). Feed back outcome could have an affect on learning behavior, on self confidence, self dignity, and the willpower to continue learning. (Chanem, 1978)

Part V: The result of the length of study time of CAI lessons for the increased knowledge of the nursing care of lung cancer patients. Subjects could have an unlimited amount of time to learn CAI lessons, because of differences in reading speed of reading, understanding contents, doing exercises and tests. The minimum amount of time observed in this study was 40 minutes and the maximum was 84 minutes (mean 60.10, SD 11.52). Thus, the length of time for CAI lessons with the long contents was indifferent to learning in class lecture (60 minutes). The difference in amounts of learning, might be according to individual difference student's ability. Because the students, who learned lessons quickly and answered the questions correctly did not need to repeat past contents. So, they used less time than the other students who played back again to choose the right answer. This study did not control subjects' time for CAI learning. Therefore, the hope was that students had been independently learning according to their ability.

CONCLUSION

Learning with CAI lessons was based on Skinner's theory which described learning as being related to action and it's results. The response of students was associated to stimuli. Learning would happen when the teacher could enhance appreciation, thus reinforcing learning. The results of the study indicated that CAI Lessons could facilitate students' self learning efficiency.

Acknowledgement

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A QUALITATIVE STUDY ON THE USE OF SOCIAL MEDIA IN HIGHER EDUCATION

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ABSTRACT

A new landscape for education is emerging as a result of advancement in information and communication technology (I.C.T) particularly social media. Malaysian education institutions are also now looking at how social media can be a mechanism for teaching and learning.
Therefore, this study aims to

1. Find out the level of awareness and understanding of social media among the lecturers
2. Find out the level of awareness and understanding of social media among the undergraduates
3. Identify benefits of using social media as part of teaching and learning mechanism
4. Suggest the types of social media which can be incorporated as a supplementary teaching and learning aid

This qualitative paper employed a combination of in-depth and focus groups interviews to achieve the research aims. The in-depth interviews were conducted with 10 lecturers from the School of Communication of a private college. On the other hand, four focus groups interviews comprising eight Communication undergraduates were conducted.

This paper will serve as an avenue for the academic faculty and researchers to further expand the study on social media. Furthermore, this paper will enable the respondents to utilise social media as a part of teaching and learning mechanisms.

INTRODUCTION
This research paper is the result of a qualitative study on the use of social media in Higher Education (H.E.), conducted between April and June 2007. This study builds on interviews with lecturers and undergraduates in the Communication faculty of a private institution.

According to Franklin and Harmelen (2007, p. 27), social media will affect how universities go about the business of education, from learning; teaching and assessment, through contact with school communities and widening participation. The researchers also believe there is a great potential to incorporate social media as a supplementary teaching and learning mechanism in H.E., as it will increase better collaboration and enhance pedagogic efficiency.

In Malaysia, it is very rare to find literature on social media, even more so for social media for HE needs. Amongst some of the rare articles that have mentioned social media is New Straits Times article on Yahoo! Inc.'s Vice President Bradley Horowitz's visit to Malaysia to promote Yahoo! Answers. Though the promotion of Yahoo! Answers was the main focus, an explanation of social media was provided because Yahoo! Answers works by getting user-generated content, a characteristic of social media which will be later discussed. However, even with a lack of literature it can be said that there is interest in the capabilities of Web 2.0 and the use of social media that subsequently came from it. In business forums especially, there are posts from 'netizens' urging other 'netizens' to read interesting social media articles sourced outside Malaysia. Besides that, in April 2007 the Private Medical Practitioners Association of Selangor and Kuala Lumpur (P.M.P.A.S.K.L) during their annual scientific meeting, did have a discussion on 'Web 2.0 and the P.M.P.A.S.K.L. website' (http://medicine.com.my/pmpaskl/?p=60) .

Thus, this paper hopes to address the need for literature in social media, particularly in H.E. In this paper, the researchers have discussed the various types of social media which include elements such as text, sound and video content sharing data. In the main discussion, the researchers expounded the benefits and implications of using social media as part of teaching and learning mechanism. Ultimately, the researchers introduced and suggested the types of social media which can be incorporated as a supplementary teaching and learning aid. This study will help institutions decide on the use of social media as an education mechanism. This paper also contained answer on how social media can play a role in higher education.

The term 'social media' also known as 'web 2.0' was coined by Tim O'Reilly at a media technology conference in 2004. Since then, the term 'web 2.0' has clearly taken hold, with more than 9.5 million citations in Google (O'Reilly, 2005). In general, social media refers to the second generation of web-based communities and hosted services which allow internet users to generate, consume, collaborate and share content. Some popular social media examples would be weblog (blog), video blog (vlog -Youtube), content communities e.g. Flickr, wikis e.g. Wikipedia (user-contributed-content online encyclopaedia) and social networking sites such as MySpace and Friendster. However, many scholars have suggested the term 'web 2.0' is meaningless in the academic world as it may serve only as a short term marketing terminology. It is true that there is no universal definition or specification regarding social media and therefore the researchers did not delve into the moniker in this paper. Nevertheless, it is important to understand the characteristics that make up social media before making decision to incorporate them as a mechanism for teaching and learning.

According to Mayfield (2007, p. 5), the five key characteristics that constitute social media are as follow:
- **Participation:** Social media welcomes any internet users who are interested in content contribution and participation in the info-sharing sphere.
- **Openness:** Most social media services are open to feedback and sharing of information. There are rarely any obstacles to accessing and utilising the content.
- **Conversation:** Traditional media are one-way communication whereas social media are better seen as conversational, two-way or multiple way.
- **Community:** Social media permits common interest online communities to establish instantaneously, be it a political issue, sports event or a social illness.

- **Connectedness:** Most social media is able to connect various media platforms and elements in one place. E.g. Video blogging allows video sharing and discussion on the uploaded video.

The researchers have used the abovementioned characteristics as measurements for the respondents' awareness and understanding of social media. In the next section, the researchers have discussed the methodology used for data collection.

METHODOLOGY
Participants
The researchers employed qualitative research method with a combination of in-depth and focus group interviews to achieve the research aims. The respondents of this research were chosen based on random sampling. Firstly, the researchers conducted in-depth interviews with 10 lecturers who comprised of five males and five females from the School of Communication. This was done to find out their level of awareness and understanding of social media. The 10 respondents are aged between 26 and 49 with diverse academic qualifications. On the other hand, a total of 32 Communication undergraduates took part in four focus group interview sessions. They are first year and second year students aged between 17 and 24 with a majority of female participants. The students were divided evenly into groups of eight individuals for each focus group session.

Interview procedure and questions
During the interview session, one researcher moderated the session and the other two researchers noted down answers while using a voice recorder. The questions aimed at the respondents through focus group interviews as well as in-depth interviews were designed with the purpose of fulfilling the objectives of this research. Both lecturers and students were posed with the standard questions, but with minor adjustments in the sentence structure in relevance to the learning experience of a student and the teaching experience of a lecturer using social media. During the interview sessions, if the respondents were found oblivious of the term *'social media'*, an explanation regarding what constitutes social media will be provided before the start of question three. The understanding of the term *'social media'* is crucial so that the interviewee(s) and focus group participants were able to actively participate in Questions 3 to 11.

Below are the questions asked during the interview sessions:
Questions
1. Can you provide at least three examples of the different forms of social media?
2. Can you name at least three characteristics of social media?
3. Do you use any form of social media?
   (If answer is yes) What are they and what is the purpose of you using these social media?
4. Do you currently use any social media in your teaching/ learning?
   (If answer is yes) Please list the forms of social media being used.
5. Do you think education can benefit from the use of social media? Please state your reasons.
6. In your opinion, what kind of social media can be incorporated into the teaching and learning at higher education?

7. In your opinion, in what way social media can improve your teaching/ learning experience?
8. Would you be receptive towards the use of social media in higher education?
9. Do you think it is feasible to incorporate social media in higher education?
10. Would there be any barriers implementing social media in higher education? (If answer is yes) What would they be?

Measures for awareness and understanding

The answers for Question 1 determined the respondent's awareness on the different types of social media. A respondent is evaluated to be aware as long as they could provide a minimum of three different examples of social media. Question 2 is instrumental in evaluating the respondent's level of understanding regarding the term '*social media*'. A respondent is considered to understand what attributes constitute social media as long as he or she could deliver a minimum of three social media characteristics with descriptions as described by Mayfield (2007, p. 5) in the background section of this paper.

Questions 3 to 11 contributed to the third and fourth objectives which are to identify benefits of
using social media as part of teaching and learning mechanisms and suggest the types of social media which can be incorporated as a supplementary teaching and learning aid. There are neither correct nor incorrect answers for questions 3 to 11 as they are purely based on the interviewee's personal opinion. Other than fulfilling the research aims, the interview findings were crucial in understanding whether the researched institution is ready for the implementation of social media for teaching and learning. The answers for questions 3 to 11 also helped the researchers further understand the implications of social media at HE, which is covered in the discussion section of this paper.

FINDINGS AND RESULT

In-depth interviews

Level of awareness

During the in-depth interviews, the lecturers showed a high level of awareness in social media. Most of the lecturers were able to provide more than three types of social media alongside examples of the types such as Wikipedia (wiki), MySpace and Friendster (social networks) as well as YouTube (vlog) and Flickr (photo sharing community). Only one of the lecturers answered podcast as a type of social media. The common answers to the types of social media were weblogs (blogs), wikis, message boards, forums, social networking sites and content communities. On the other hand, only two lecturers provided inaccurate examples of social media. One of them confused e-mail as a type of social media whereas the other lecturer displayed very low awareness of social media by giving inaccurate social media examples such as newspapers, magazines and television.

Level of understanding

Moving on to the level of understanding, most lecturers have only basic understanding of the social media characteristics. They were able to provide two to three characteristics with minimal description. The most common characteristics provided by the lecturers were interaction, participation and openness. Openness is crucial to current Web 2.0 discussions (Alexander 2006). Majority of them laid emphasis on the characteristic of openness and believed that is what makes social media unique. Although some lecturers

struggled to answer the social media characteristics, they have already been participating in various types of social media applications. The lecturers use social media for information searching, communicating with their friends and sharing opinions about current and social issues. A minority of them also use social media as a platform to showcase and publicise their work and prompt feedback from the online community.

The use of social media
Notably, all lecturers use Wikipedia, an online user-contributed encyclopaedia to have a quick glance on new jargons or unfamiliar topics especially to do with current, social and academic issues. Most lecturers found using Wikipedia helpful in feeding basic background information but all of them strongly discouraged the reference of Wikipedia for academic purpose. Other than Wikipedia, the lecturers generally use message boards to enable feedbacks, discussions and queries amongst their students. A small number of them have also experimented the use of blogs and made it a requirement for students to create blogs and discuss their work. Thus far, the response has been encouraging with students regularly posting up their work and even receiving feedbacks not only from peers but also other unknown bloggers.

All the lecturers believe the use of social media will increase pedagogic efficiency and all of them are receptive towards using social media as a supplementary teaching tool. However, few of the lecturers pointed out that not all types of social media are beneficial for education. They mentioned the advantageous ones include message board, blog, podcast and discussion forum because they are useful for scholarly debate and discussions. Additionally, they would like students to post up their video presentation in vlogs and other content communities to engage discussion and invite feedbacks from others.

A high number of the lecturers felt their teaching experience can be improved with the aid of social media. They felt social media is an avenue for exchanging information because they extend beyond the confines of classroom and the limitations of existing knowledge. The lecturers also expressed that social media will give teaching and learning a more relaxed and open environment. Thus, it would undoubtedly help them to connect better with their students, as well as monitor the progress of their performance beyond classroom environment. The majority of lecturers were optimistic towards the future use of social media in the teaching and learning environment. Overall, they believed it is feasible and sustainable for social media to be incorporated into H.E.; withstanding barriers such as computer illiteracy, scarce resources, and the reluctance of using new media for teaching and learning.

Focus group interviews
Level of awareness
Like their lecturers, majority of the students also demonstrated a high level of awareness in social media. The students provided at least four different types of social media along with various examples. The general answers to the types of social media were blogs, wikis, social networking sites and content communities. However, a minority of the first year students presented incorrect examples of social media. They gave social media examples such as television and newspaper which are categorised under traditional media.

Level of understanding

The second year undergraduates showed a higher level of understanding compared to the first year students. The second year students were able to provide two to three social media characteristics with substantial description. Interaction, openness and participation were among the key social media characteristics mentioned. In contrast, the first year students have failed to provide any characteristics of social media as described by Mayfield (2007, p. 5). The first year students provided ambivalent answers such as "it is free and fast" and "social media is entertainment" which indicated their lack of understanding in social media characteristics.

The use of social media

Despite the low level of understanding in social media, the first year students were mostly active users of various kinds of social media. Likewise their lecturers, all the students use social media for information searching, communicating with their friends, sharing opinions about social and current issues as well as for entertainment purposes. A minority of them also use discussion forums and message board to communicate with their lecturers during assignments. Interestingly, all students have an active account in social networking websites such as Friendster (social networks) or MySpace. Majority of them are regular visitors of video blogging websites particularly YouTube. A small number of them are also active bloggers and they would dedicate time to read others' blog on a daily basis. In terms of the use of content communities, every student has accessed Wikipedia to acquire knowledge and gain understanding on a multitude of topics in their studies. The students mentioned Wikipedia is extremely helpful and easy to navigate which will enable them to quickly become somewhat an expert in the topics searched.

Majority of the students believed that education can benefit from the use of social media and they are also receptive towards using social media as a supplementary teaching tool. As such, they suggested the use of message boards, discussion forums, blogs and podcasts in their course syllabus. All the students believed their learning experience can be more fun, 'colourful' and effective with the aid of social media. Furthermore, they foresee social media giving teaching and learning a more informal and 'open free environment', thus making learning an interesting progression. However, some of them pointed out social media should not replace the physical presence of the lecturers but rather complement the teaching.

In a nutshell, the students strongly believed it is feasible for social media to be incorporated in H.E. and they are looking forward to the use of social media in their learning process. They also highlighted that in order to sustain the use of social media; it requires the tri-partite co-operation of lecturers, students and the college.

DISCUSSION AND IMPLICATIONS

Google Inc. and media mogul Rupert Murdoch have recently invested millions to buy over social media companies YouTube and Myspace. With so much business potential within the social media world, this new wave of innovation has certainly penetrated into our '*information superhighway*'. But what can the education sector do with social media to improve their E-learning and pedagogic efficiency? One of the potential *ways* is to incorporate social media as a teaching and learning mechanism. Hence, answering how

social media can play a role in H.E. is one of the most important contributions of this study.

According to Wenger (1998), a community of practice is characterised by 'a shared domain of interest' where 'members interact and learn together' and 'develop a shared repertoire of resources'. What Wenger (1998) described is exactly what social media means to a community like a university, a group of students or a given group of learners. We need to understand social media learning in H.E. is beyond e-learning. Social media has the inherent capabilities to enable groups of users to socialise, collaborate, and work with each other in a content sharing environment. However, like what the respondents highlighted, not all social media are suitable for being a mechanism for teaching and learning.

Before deciding which social media applications are appropriate, a university needs to examine the level of awareness and understanding in social media and whether the community (lecturers and students) is ready for the implementation. According to our findings, both lecturers and students of that faculty showed a high awareness and usage of social media. They also demonstrated an understanding on what characteristics constitute social media. More importantly, all of them expressed huge interest and high receptiveness towards the use of social media in H.E. All these information signalled that the researched institution is ready for the use of social media as education mechanism. In fact, many of the students have already started blogging as part of their assignment.

It is no surprise that majority of the students and lecturers have not applied social media to education as aggressively as they have applied for their personal use because most social media such as social networks and blogs were, in the beginning, created for purposes of entertainment and social gratification. Using social media as an educational tool is a relatively new, as revealed by our research participants. Lecturers and students do not have much exposure to the various ways in which social media applications can be used as educational tools. That is also why the researchers conducted such exploratory study in the use social media in H.E.

Educators need to realise that social media is an application; a new educational tool. It is up to the learning institutions to be innovative in the use of these new technologies to serve their educational needs. Therefore, administrators and academic directors should prepare a roadmap on how they could incorporate social media in the academic curriculum or even experiment with certain applications. From the recent study conducted by Franklin and Harmelen (2007), they found out some of the universities have started using social media for teaching and learning. For instance, the University of Edinburgh has come up with their Web 2.0 strategy and action plans which include replacing newsletters with blogs and real simple syndication (R.S.S.) feeds. The University of Warwick also experimented the potential of blogs by offering their students personal blogs since 2004. These examples clearly showed institutions are realising the potential benefits of social media being incorporated as a teaching and learning mechanism.

Nevertheless, H.E. is bound to face certain challenges in rolling out such initiatives. Those challenges encompassed computer illiteracy, scarce resources, and the reluctance of using new media for teaching and learning. Marien (1996, p. 383), in reporting Rosenberg's study, stated computer-literacy education often teaches only shallow

recognition of jargon and components, and only a few applications. Therefore, conducting workshops to train lecturers as well as students to use the full potential of identified social media will help them adapt faster to these new innovations. Keeping the lecturers and students abreast on the use and latest development of social media is also essential because technology is rapidly changing and it requires new knowledge to constantly improve. In the next section, the researchers have suggested the types of social media which are beneficial for teaching and learning besides illustrating the examples to implement them in H.E.

RECOMMENDATIONS

In this study, the researchers were interested in only types of social media that are beneficial towards H.E. The suggestions are provided based on the following three methods:

1. Evaluation of respondents' suggestions
2. Refer to past researches and articles concerning the use of social media in H.E.
3. Study on the various universities that have incorporated social media in the teaching and learning environment

In the next few pages, the researchers will introduce and discuss the four types of social media beneficial for H.E. It should be kept in mind that social media helps education extend beyond the rigidity of a classroom (Owen, Grant, Sayers & Facer 2006, p.52). Thus the discussion on the four types of social media aims to enable teaching and learning that thrives on openness and new ways of student collaboration.

Podcast

'Podcasting is the term for creating a web-based broadcast series that is delivered to subscribers automatically through the use of R.S.S. software' (Donnelly & Berge 2006, p.1). Accessing podcasts require the use of playback software such as Windows Media Player or hardware such as iPod or any other MP3 player, depending on the file format of the podcast. Mobility is the distinctive feature of a podcast. Users who own mobile devices such as MP3 players and laptops will be able to access podcasts practically anytime and anywhere.

Examples of use

Podcasts can be in audio or video forms and it has been used by academicians to record their lectures. Besides students obtaining the podcast file for revision, it can also provide additional information on the subjects either from the course lecturer itself or other educational sources. In the Malaysian H.E. scenario, many private institutions have twinning programmes with universities abroad and podcasting enables lecturers to share their lectures with students who are studying at off-shore campuses. On the other hand, video podcast will be particularly helpful when graphics are needed to better understand the course matter. Our research revealed **a** respondent who is a lecturer has created video tutorials to teach her students on how to use software applications and it has helped her students tremendously.

Wiki

Franklin and Harmelen (2007, p.5) defined wiki as 'a system that allows one or more people to build up a corpus of knowledge in a set of interlinked web pages, using a process of creating and editing pages'. The word wiki has been derived from the

Hawaiian term *'wiki wiki'* which means quick (Parker & Chao 2007, p. 1). That term aptly reflects the rapid changing content on Wikis, because it allows collaborative authoring of materials.

Tonkin, 2005 (in Parker & Chao 2007, p.5) identified four different forms of educational wikis:

1. Single-user wikis allow an individual to collect and edit his or her own thoughts using a Web-based environment.
2. Lab book wikis allow students to keep notes online with the added benefit of allowing them to be peer reviewed and changed by fellow students.
3. Collaborative writing wikis which can be used by a team for joint writing.
4. Knowledge base wikis provide a knowledge repository for a group.

Examples of use
A group studying 'factors leading to smoking' can use a wiki to create a multi author body of knowledge. Each student can create subtopics which collectively make up their study report. Besides that, wikis allow the students to readily view and edit each other's work, thus creating an open atmosphere of learning and self-editing for the students. This annotated bibliography will be useful to all students who are looking up books for future reading. According to The Economist (2006, p. 10) magazine, wikis are good at summarising debates and discussion, but they are ill-suited for biased opinion.

Weblog (blog)
Blogs started out as an avenue for the average person to publish his/her work without the messy red tape that riddles traditional publishing and without the mind-blogging technology technicalities that are a prerequisite for building a website. According to The Economist magazine (2006, p. 5), blogs, unlike traditional journals, are social by nature, whether they are open to public as a whole or only to a small selected group. Most young people are already familiar with blogs as Owen, Grant, Sayers and Facer (2006, p. 14) said 'Children and young people are increasingly becoming authors of blogs'.

The Brisbane Graduate School of Business at Queensland University of Technology experimented with an optional Masters in Business Administration (M.B.A.) blog for its M.B.A .students to participate. The students were encouraged to contribute posts on the blog regarding things that revolved around the course's subject matter. Research done revealed that 60% of the students agreed the blog helped meaningful intellectual exchange (Williams & Jacobs 2004, p. 9).

The purposes blogs can be used for may seem almost similar to wikis, but there are a few different characteristics between blogs and wikis that will help a user determine which application best suits the task at hand.

The major differences:
- Mader, 2006c (in Parker & Chao 2007, p. 67) said blogs allow for comments while keeping original text intact, whereas wikis encourage participation to edit content. Thus blogs are more ideal for single person information dissemination, while receiving feedback whereas wikis are ideal for collaborative group work.
- Blogs are organised by the date of posts whereas wikis are arranged by the topics

Examples of use

With the use of blog, lecturers can post up additional information about a certain topic of a course whilst encouraging students to visit the blog and post their feedback on the issue. There are also many other bloggers in the world who are professionals sharing their thoughts on their area of expertise. Lecturers can direct students to blogs that are read-worthy to gain additional perspectives. Blogs can also provide the latest information that was sidelined or not picked up at all by mass media. The main problem with blogs is the credibility of the information.

Blogs act as a publishing platform for students' work where they can receive feedbacks and comments from 'netizens'. Thus students can expect to have more varied comments and feedbacks as compared to only the reviews by just his or her classmates. This is particularly helpful for journalism students to exhibit their writing for others to critic. Good writing may even earn the student a loyal readership, as it has already happened for established student bloggers. Blogs also train students to express their opinions as well as improve writing skills. The blog archive stores post from the day the blog is created right up to the most recent posts, enabling a student's progress to be monitored and evaluated.
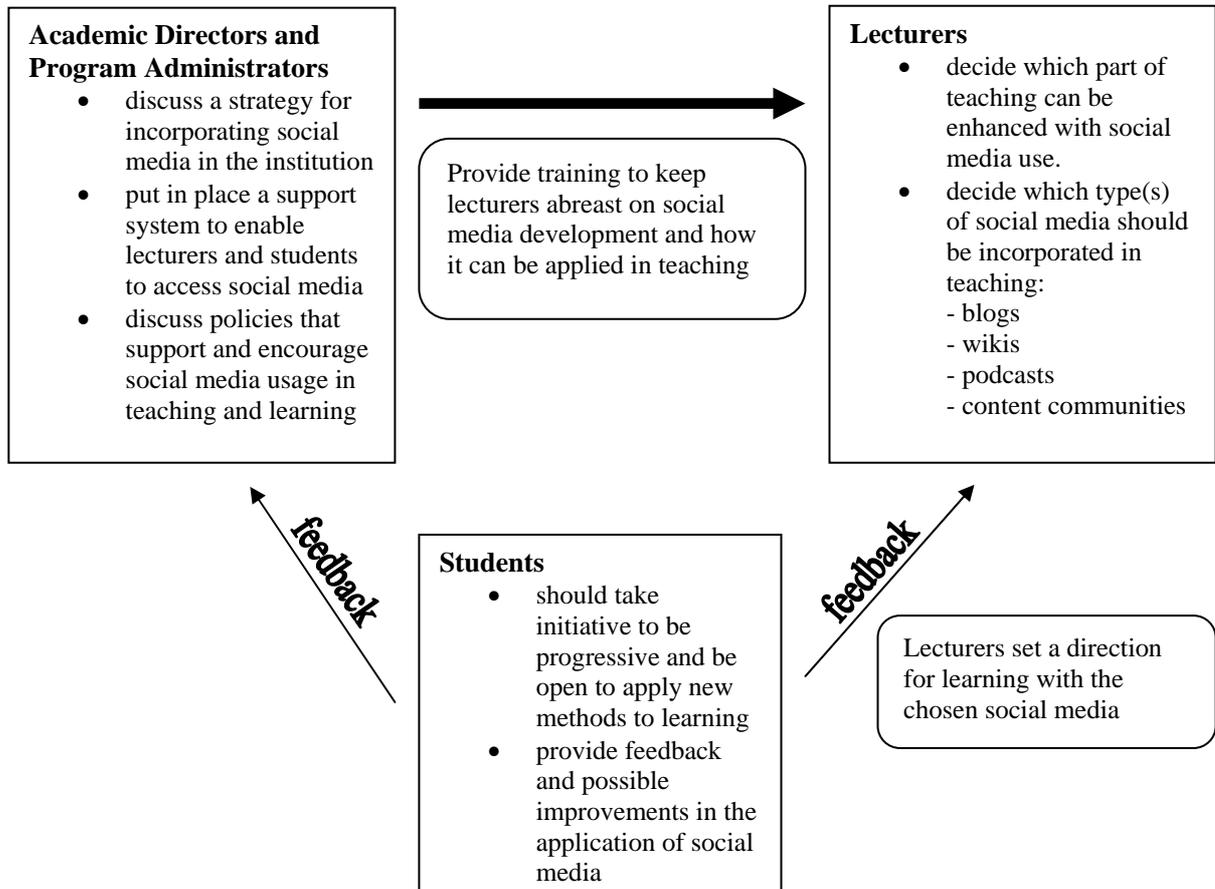
Content communities

Content communities are applications which allow a certain form of content to be uploaded for sharing with others. For example, YouTube is a channel for uploading movies; Flickr is a bank for sharing photos and Scribd is a platform for uploading documents in different formats (Franklin & Harmelen 2007, p.6). Content communities make it easy for both students and lecturers to upload materials such as assignments and course documents and receive comments about it. Besides that, content communities can work as an online library because of the wealth of content that can be used for teaching and learning.

Examples of Use

Students of design courses can upload their various design based assignments to a content community and have it reviewed by peers. The feedbacks by peers can essentially help the student improve his work before the final submission. For additional learning materials such as news articles for discussion, lecturers can orchestrate students to content communities such as YouTube which hosts numerous clips of news. This way, students not only have quick access to materials, it is also cost efficient for the students, as materials provided are open for sharing.

Based upon the research findings, the researchers have come out with a model which simplifies the use of the main social media to enhance teaching and learning among the educators and students. Following is the model:

Tri-partite cooperation for the implementation of social media in H.E.

Academic Directors and Program Administrators
- discuss a strategy for incorporating social media in the institution
- put in place a support system to enable lecturers and students to access social media
- discuss policies that support and encourage social media usage in teaching and learning

Provide training to keep lecturers abreast on social media development and how it can be applied in teaching

Lecturers
- decide which part of teaching can be enhanced with social media use.
- decide which type(s) of social media should be incorporated in teaching:
  - blogs
  - wikis
  - podcasts
  - content communities

feedback

feedback

Students
- should take initiative to be progressive and be open to apply new methods to learning
- provide feedback and possible improvements in the application of social media

Lecturers set a direction for learning with the chosen social media

CONCLUSION AND FUTURE CONSIDERATIONS

Social media has the ability to facilitate institutional practice that shares content, conversation and interaction in an open environment. The incorporation of social media as a mechanism for teaching and learning will achieve a shared reservoir of intellectual resources and enable academia to interact and learn collectively. Like what the lecturers said, social media are avenues for exchanging information and ideas because they extend beyond the confines of college gates and the limitations of existing knowledge. Social media will not replace the physical presence of a lecturer but complement the teaching process, making it more diversify and effective.

The educational potentials of information technology are profound and numerous, and it is easy to get into an enthusiastic mode of thought (Marien 1996, p. 49). According to Hassan and Thomas (2006), technologies are fluid, the outcomes are uncertain, and the whole field is characterised by rapid innovation and adaptation. Therefore, educators must understand what kind of social media best suit their teaching and learning environment. With the availability of web 2.0 applications, the researchers recommend that institutions first take a light-weight approach towards using social media as a mechanism for teaching and learning. Nevertheless, the researchers hope institutions will

start exploring how social media can change the way teaching is done, optimise learning beyond university boundaries and ultimately create a better educational environment. With the meagre resources for social media studies in H.E., universities should also consider funding research that probe more deeply into how social media impacts pedagogy. The research should include the impact of social media on teaching staff and students respectively. An in-depth study on the issues and concerns pertaining to social media implementation should also be carried out. This will help educators to have a bigger, clearer picture of the pros and cons for social media implementation.

In conclusion, social media will play a useful role in complementing the academic teaching and increasing overall pedagogic efficiency, but institutions must be tactful in choosing the types of social media for H.E. Facing all challenges, the main problem will not be in how to learn, but in how to use social media to best effect.

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STUDENTS' PERCEPTION TOWARDS ACCOUNTANT PERSONALITY IN ACCOUNTING DEPARTMENT AND MANAGEMENT DEPARTMENT
(A Case Study at STIE Perbanas Surabaya)

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ABSTRACT

Accounting is becoming more and more prospective in a college of economics, especially at STIE Perbanas Surabaya. This evidence is indicated by the bigger number of students who enter accounting department compared to those who enter management department recently. Knowing the accountant profession and accountant personality is important for them. However, research related to the perception towards accountant personality has not yet been conducted at this college. It is assumed that the accounting students have more positive perception towards accountant personality compared to management students. This paper is intended to provide evidence concerning the students' perception towards accountant personality. Using 167 respondents with 49 management students and 118 accounting students, the results show consistency with the previous studies, such as the accountant personalities as being *investigative* and *conservative*. Other findings concerning the differences among the accounting and management students' perception towards accountant personality are also revealed. Based on the results, suggestion and recommendations are also discussed.

Key words: perception, accountant personalities, major subject, optional subject

INTRODUCTION

Recently, most students have been interested in accounting especially at STIE Perbanas Surabaya. This college of economics has two departments: one is accounting department and the other is management department. In management department especially, there are some major subjects (called concentrations), such financial management, human resources management, and banking management.

These two departments show different trends of patterns of students, behaviors viewed from the department they choose. Early in 1990s, most of the students entered management department rather than accounting department. This was due to some economic changes in the country of Indonesia, especially the deregulation of banking system that was started since 1988, called October package (Pakto 1988). The banking system at that time made the business society establish financial institutions, especially banks more easily and due to this, the demand of human resources related to bank management was so high. Therefore, students entering universities or colleges tended to choose management department rather than accounting department.

The condition above did not exist anymore since the monetary crisis hampered the Indonesia economy and the starting point of the era of government reform which began in 1997. After the overthrown of the Soeharto regime in May 1998, the economic condition was full of uncertainty. In addition, this condition was followed by big number of the liquidated banks. The most serious problem was that this monetary crisis was added with social and political crises. The liquidation of many banks automatically increased the degree of unemployment because many employees of the banks were made redundant. This chaos was predicted to influence the society's image toward education, especially the college of economics with management department.

Unlike management department, accounting management at STIE Perbanas Surabaya recently has received more students. There seems to be a new trend at this college because it can be caused by the society's image of the banking industries that have undergone 'a tragedy' during the past decade. The number of students entering accounting department has increased more and more. For particular example, the registers of full scholarship at STIE Perbanas Surabaya shows that the prospective students choosing Accounting is increasing by 51% compared to those choosing Management especially in 2002. Up to 2006, based on the data in academic administration, on average, the students entering Accounting has been 50% bigger than Management. On the contrary, when referred to a study by Taylor as in Hunt et al., (2000), the percentage of students majoring in accounting decreased from 4% in 1990 to 2 % in 2000. At STIE Perbanas Surabaya, the pattern of students in accounting management shows different evidence.

Based on such phenomenon above, it is interesting to see whether the students of accounting have moiré positive perception towards accountant personality than the management students. It is assumed that the increasing number of accounting students entering accounting department recently can be due to their positive perception towards accountant personality (as the profession after finishing their study). Another purpose of this research is to find ways for policy to be taken at this college so that the students of accounting can be kept increasing.

THEORETICAL BACKGROUND

Many studies related to accounting and the students' perceptions have been conducted in various ways. More specifically, researchers have been interested in distinctive personality characteristics of accountants. Studies of perception of accountant personality, for instance, have been conducted in various methods and media. In reviewing some previous studies related to students' perception toward accounting, it can be noted some as follows.

Chia (2005) conducted a research on the accounting graduates at UK and the recruitment pattern at Big 5 firms. It was found out that the result of the selection process based on the early interview was influenced by their academic performance and their involvement in extracurricular activities. In the following phase of the interview, the result was also influenced by the result of the early interview. Finally, the last interview was influenced by their emotional intelligence as well as the previous results of interviews. However, employers are still demanding graduates with substantial accounting knowledge, as well as strong communication and

analytical skills. These skills are needed as accounting firms and industries face increased competition, more economic conditions and technological advances and increased litigation risk.

Accountant role has been changed. According to Siegel (2000) accountants' role has been changed from number crunchers and financial historians to business partners and trusted advisors. More specifically, Myers (2002) had interviewed several accountants who had assumed the role of Chief Financial Officers and he found that they expected to be creative, motivating, energic, and versatile individuals, with strong communication and management skills. Unlike Myers, Parker (2000) stated that common stereotype of accounting—usually portrayed as male—is introverted, cautious, methodical, systematic, antisocial, and boring. Another claim is by Maslow (1965) as in Aranya, Nissim, and Wheller (1989). He said that accountants are precise when it comes to detail but they are uncreative and do not like encounter new ideas without being thoroughly prepared for them.

In connection with the stereotype of accountants, Aranya, Barak and Amernic (1981) had identified stereotype of accountants in the framework of Holland's theory. According to this theory, the stereotypes are being realistic, investigative, artistic, social, enterprising and conventional. Yet, according to this theory, each of accountant professionals has different stereotypes. For instance, an auditor tends to be more realistic, investigative and enterprising. Research concerning accounting students' perception toward accountant personality conducted by Hunt et al (2004) shows that that the generalization of the results on accountant stereotype is not different from that perceived by the professional accountants. This is due to the decision making on choosing the accounting department to enter also reflects their selection for carrier and professions they intend to acquire.

According to Hunt et al, students of accounting have more positive image than those of non accounting. Another finding is that the image of accountant professional is better that that of accountant personality. It is stated that the inappropriateness of personality towards the profession causes the turnover of the staff and the disturbance of their jobs. This also applies in the job related to accounting. Research conducted by the Team of Policy Study related to accounting students at STIE Perbanas Surabaya (2007) shows that the commitment of accounting graduate organization is said to be low. The intention to find and get a job is merely to get experience of working and they move to another place more than once a year. This is really a unique phenomenon.

In reference to Holland's theory as asserted by Aranya (Barak and Amernic (1981), it is stated that the individual through his choice of occupation attempts to fulfill a way of life. Based on this theory, it can be inferred that the employability of accounting graduates and their commitment to organization where they work can be influenced by their personality (Hunt et al call it accountant personality). Thus, the accounting students' perception toward accountant personality is important because the individual's choice for his career is based on his stereotype. In general, individual may select careers according to the stereotypes they hold of persons in those careers (DeCoster, 1971).

The theory of personality describes and orders characteristics of individuals as a whole. Viewed from this perspective, an individual's characteristics can be described by means of neural-psychological approach and sociological approach. Based on these two extreme approaches, there exists individual psychology, group behavior, and organizational and institutional structure. At the level of individual, current research primarily has evolved along three tracts, namely (1) behaviorism, (2) personality theories, and (3) cognitive science (Engler, 1999 and Flanagan, 1991 in Wheeler, 2001).

In connection with personality theories for instance, it can be referred to Holland's theory (1973) as suggested by Aranya and Wheeler (1989). According to this theory, individual's type is essentially stable over time. It is therefore, such a theory in this paper is used to approach the research related to accountant personality.

Holland's Theory

Holland Theory (1973) believes that most persons and work environment tends to have a consistent set of labels associated with them. Implicitly, the accountant stereotype is a specific case of the conventional type that matches the secretarial administrative environment. Thus, people choose to be accountant because they are conventional. Holland generalized that accountant in industry would be conventional and enterprising types, whereas accountant in public practice would be *conventional* and *investigative* types. Based on this theory, there are six personality types, such as *Realistic* (R), *Investigative* (I), *Artistic* (A), *Social* (S), *Enterprising* (E), and *Conventional* (C).

Realistic (**R**) people like realistic careers such as auto mechanic, aircraft controller, surveyor, electrician, and farmer. This R type usually has mechanical and athletic abilities, and likes to work outdoors and with tools and machines. They generally work with things more than with people. The **R** type is described as conforming, frank, genuine, hardheaded, honest, humble, materialistic, modest, natural, normal, persistent, practical, shy, and thrifty.

Investigative (**I**) people like investigative careers such as biologist, chemist, physicist, geologist, anthropologist, laboratory assistant, and medical technician. This type also usually has math and science abilities, and likes to work alone and to solve problems. Another characteristic is that the **I** type generally likes to explore and understand things or events, rather than persuade others or sell them things. Last of all, the **I** type is described as analytical, cautious, complex, critical, curious, independent, intellectual, introverted, methodical, modest, pessimistic, precise, rational, and reserved.

Artistic (**A**) people like artistic careers such as composer, musician, stage director, dancer, interior decorator, actor, and writer. They also usually have artistic skills, enjoy creating original work, and have a good imagination. In addition, the people of this type generally like to work with creative ideas and self-expression more than routines and rules. In general, the **A** type is described as complicated, disorderly, emotional, expressive, idealistic, imaginative, impractical, impulsive, independent, introspective, intuitive, nonconforming, open, and original.

Social (**S**) people like social careers such as teacher, speech therapist, religious worker, counselor, clinical psychologist, and nurse. They also like to be around other

people, are interested in how people get along, and like to help other people with their problems. Last of all, the **S** type people generally like to help, teach, and counsel people more than engage in mechanical or technical activity. The **S** type is described as convincing, cooperative, friendly, generous, helpful, idealistic, kind, patient, responsible, social, sympathetic, tactful, understanding, and warm.

Enterprising (**E**) people like enterprising careers such as buyer, sports promoter, television producer, business executive, salesperson, travel agent, supervisor, and manager. They also have leadership and public speaking abilities, are interested in money and politics, and like to influence people. The **E** type people generally like to persuade or direct others more than work on scientific or complicated topics. The **E** type is described as acquisitive, adventurous, agreeable, ambitious, attention-getting, domineering, energetic, extroverted, impulsive, optimistic, pleasure-seeking, popular, self-confident, and sociable.

Conventional (**C**) people like conventional careers such as bookkeeper, financial analyst, banker, tax expert, secretary, and radio dispatcher. The **C** type people also have clerical and math abilities, like to work indoors and to organize things. The **C** type people generally like to follow orderly routines and meet clear standards, avoiding work that does not have clear directions. The **C** type is described as conforming, conscientious, careful, efficient, inhibited, obedient, orderly, persistent, practical, thrifty, and unimaginative.

According to Holland's theory, the RIASEC above are used to describe the areas that a person's interests most resemble. For example, we could say that one person is most like a Realistic, or **R**, type. Another person might be more like a Social, or **S**, type. Furthermore, a person often resembles several types, not just one.

A six-sided figure--called a hexagon--is used to show the similarities and differences among the six types. Types that are next to one another on the hexagon are most similar. The following hexagon shows the relationships among the six types. For example, *Realistic* and *Investigative* types tend to have similar interests, but *Realistic* and *Social* types tend to be most different. *Conventional* types are most closely related to *Enterprising* and *Realistic* types, somewhat less similar to *Social* and *Investigative* types, but tend to be most different from *Artistic* types, and so on.

Figure 1
Holland's Six Types Personality
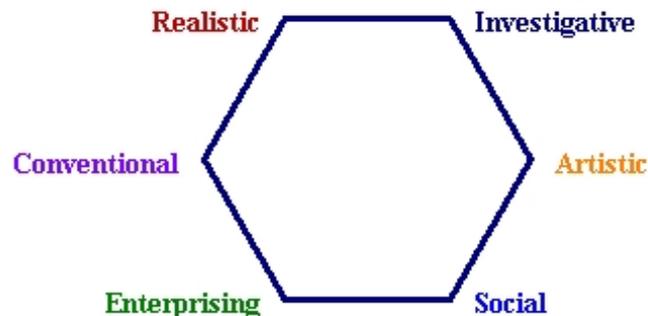
Source: Bloom and Coan. 1979.

RESEARCH METHODOLOGY

Using the theoretical framework described above, this research uses accountant personality as the variable consisting of six types such as (1) *Realistic*, (2) *Investigative*, (3) *Artistic*, (4) *Social*, (5) *Enterprising*, and (6) *Conventional*.

The students' perception toward each type of the six types above is measured by means of questionnaires developed by using *Self-Directed Search* (SDS). This measurement is also used by Holland for measuring personality (http//www.self-directed-search.com). It is then modified by reference to the factors of personality used by Hunt, Falgiani, and Intrieri (2004). Likert sakle is used, such as between 1 to 5. In collecting the data Descriptive analysis technique is used. However, the data gathered is separated into two groups, the students of Management and those of Accounting. This is done in order to avoid bias of the perception because accounting students are assumed to have more knowledge of accounting than management students. The responses with 4 and 5 scales are taken justification assuming that these two scale levels are considered to have shown the perception of accountant personality. After that, the (*d*) test is used to see whether there is difference of perception between the students of accounting and those of management.

RESULTS AND DISCUSSION

From 200 questionnaires distributed to the students, 100% were returned and 167 questionnaires were considered analyzable. These 167 questionnaires consist of 49 management students and 118 accounting students. Among them, 66% do not have any connection people or friends working in accountant profession. Therefore, none of their initiatives of choosing accounting is due to their accountant friends. Of the whole respondents, 85 % of them choose accounting because of their own initiatives, 13% because of their parents' initiatives, and 11% because of their friends or relatives. From 34% of the students who have been acquainted with accountants in various ways, such as the accountants are their relatives (12%), their brothers or sisters (8,4%), and their friends (13,6%).

Based on the years they enter the college, both management and accounting students are from different years. Management students consist the students of 2004 (71.4%) and 2003 (28.6%). Management students consist of 2005 (50%), 2004 (38.1%), 2003 (5.1%), 2002 (4.2%) and 2001 (2.5%).

The compulsory subjects for them are *Introduction to Accounting* 1 and 2, *Intermediate Accounting*, *Management Accounting* and *Professional ethics*. Among the students, the students who had taken *Intermediate Accounting* (76.6%), *Management Accounting* (90,4%) and *Professional Ethics* (90.4%)

Based on their ideals, the management students want to be *entrepreneurs* (42.9%), *marketing staff* or *manager* (26.5%), *financial staff/ manager* (18.6). The accounting students want to be *financial/ accounting staff/manager* (40.7%), *entrepreneurs* (30.5%), *auditors* (16.1%), and others i.e., *lecturers, consultants* (6.6%).

Using the scale from strongly disagree (1) to strongly agree (5), more than 70% of students responded the scale of 4 and 5 (agree and strongly agree) meaning that they think that accountant personality is positive. Most of the students stated that accountant personality is dominated by *investigative* and *conventional* personality, except towards educator accountant. Thus, this result confirms the result by Holland (1973) as in Aranya and Wheeler (1989), and Aranya and Wheeler (1989). It is stated that accountants working as staff belong to *conventional* personality type while those who are public accountants or auditors *investigative* personality type.

Based on the students' perception toward auditor personality, they think that auditors have *investigative* and *social and conventional* personality types. According to them, *investigative* is perceived as having high curiosity (97%), being careful (945), doing systematically (93%), independent (92.8%), fond of analytical things (81.4%), and always understanding things and events (80.8%). This result also confirms Holland's (1973) as in Aranya and Wheeler (1989), stating that accountant has investigative personality.

However, something different in the research is the students' perception toward social personality which is perceived as being similar to enterprising. This *social* type is the second rank after *investigative* type. They agree that auditor is *social* with the characters such as being self confident (87.4%), high ability to build trust (83.2%), easy to work in team (77.2%), idealistic (74.3%), and convenient to be partner for discussion (70%). Though this result does not confirm Holland's (1973), it, in fact, confirms Ewing's (2001).

The third rank is *conventional* type. The respondents think that auditors are individuals who are diligent (94%), doing thins carefully (93.4%), efficient (78.4%), fond of the jobs with procedures or job orders (71.1%). This confirms the results by Holland (1973) as in Aranya and Wheeler (1989(Aranya and Wheeler (1989), and Albrecht and Sack (2000).

The personality of management or *financial* accountants based on the students' perception is *investigative, conventional* and *social*. The accountant who are perceived to be *investigative* are considered to be careful (95.4%), having curiosity (91.6), independent (90.4%), fond of doing analytical and systematical jobs (87.4%), like analytical things (79%), feeling convenient working in the rooms (70.7%),

The accountants who are perceived to be *conventional* are thought to be doing things carefully (90.4%), diligent (90.4%), efficient (83.8), fond of structured jobs (78.4%), fond of routine activities (77.4%), and fond of working in the room (70.7%). The *financial* accountants who are perceived to be *social* are considered to be self confident (89.8%), easy to work in team (81.4%), able to build trust to other people (77.8%), sociable (73.1%), and idealistic (72.5%). In general, the students think dominantly that accountants are *investigative*. Yet, *conventional* type is also considered to be the financial accountants' personality. Anyhow, this still confirms the results by Holland's (1973) in Aranya and Wheeler (1989).

Educator accountants 'personality is uniquely perceived by the students to be *artistic* personality. In general it is perceived to be a lower level among the other personalities. *Finance* and *management* accountants are perceived with high rating, especially of *educator a*ccountants. As a whole, the respondents agree that *educator* accountants have *social, investigative, artistic, enterprising,* and *realistic*.

Social personality type is perceived to be easy to work in team (91%), conveniently treated as partner for discussion (90.4%), sympathetic (89.2%), sociable (87.4%), good listener (86.6%), able to build trust to other people (86.8%), idealistic (71.9%), *Investigative* personality covers being careful (94%), having curiosity (93.4%), independent (92.2%), fond of doing things systematically, try to understand whatever event and things (81.4%), like analytical things (76.6%). *Artistic* personality is perceived to be fond of creating ideas in the job (88%), want to be free to express (87%), enjoy to create things (84%), have good imagination (83.2%), brave to express feeling (76.4%). *Enterprising* personality is perceived to be independent (94.6%), always optimistic (91.6%), easy to socialize (91%), energetic (87%), easy to attract other people (84.4%) able to dominate other people or in the group (70.1%). *Realistic* personality is perceived to be honest (86%), behave naturally (83.8%), more proud of their own work whatever it is (75.4%), humble (74%), like the job interacting with tools (74.3%).

Accountant Stereotype that is considered as an individual with stiff personality, low communication ability, no initiative, shy, passive, and boring is graded in the lowest level in this research. Only 6% to 8% respondents stated that accountants are identical to such a personality.

Using ANOVA testing, it shows that there is no difference of negative perception towards accountants between management students and accounting students. Yet, when analyzed partially, there is a difference of negative perception towards accountants as *auditors*, *financial/ management* accountants, and *educator* accountants.

The significant difference is between accounting students and management students towards *auditors* is the perception of auditors as individuals who have no initiative (F=7.150; sig=0.008), low of communication ability (F=6.052; sig=0.0015), difficult to socialize or covert (F=5.653; sig=0.0019), have no initiative (F=4.461; sig= 0.036), and not appropriate to be leaders (F=4.331; sig=0.0039). These results shows that there is a consistency with Hunt et al (2004), and Albrecht and Sacht (2000), stating that accounting students have better perception than those of other department students towards accountant stereotype. However, the management students having negative perception towards accountants can be due to their curriculum which is not provided with *Auditing* and therefore, their horizon of auditing is less.

Simultaneously, there is no difference of perception towards accountants and this can be due to the accounting students who do not understand about accountant profession. This suggests that they be introduced to the subject of *Introduction to Accounting* or *Accounting Principles*.

CONCLUSION

Using 6 types of accountant personalities from Holland's Theory, the accounting students and management students' perception shows that accountant personality is dominantly on the types of *investigative* and *conservative*. Thus, this result is consistent with the previous studies. Furthermore, it shows that the students' perception towards accountant personality as being *artistic* is proved to be low. Yet, towards *educator accountants* as being *artistic* shows that this perception is high. This result is different from the previous studies because the previous ones might be due to focusing on only the two types such as accountants as *auditor* and *financial* accountants.

There is no difference of perception between accounting students and management students towards accountant personality. Accountants based on their perception are considered to be identical to individuals who are careful, diligent, methodical, efficient, doing things carefully, having mathematical skills, and paying attention to details. Though identical to such personality, the students also perceive that accountants have fascinating personality which is to be admired, have ability to communicate and are being active. It can be inferred from this results, that soft skills are needed for accountants.

Nowadays, accountants have developed their roles government sectors and non profit ones. Due to this phenomenon, the limitation of this study is that this research has not yet covered such sectors. For that reason, the accountant personality still needs to be described in details covering the sectors of government and non profit ones. Another limitation is that this research has not yet covered explanation on whether the students really understand the accountant profession. Therefore, it can also be assumed that though they choose accounting, they do not likely want to be accountant. Based on such findings and some limitation, it is suggested that further research develop it by investigating the reasons why the students choose accounting and find out further the students' understanding about accountant profession.

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ETHNICITY AND GENDER INFLUENCES ON LEARNING STYLES AMONG PRIVATE COLLEGE STUDENTS IN KLANG VALLEY

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ABSTRACT

One of the most promising answers to more effective teaching is research on student learning styles (McCarthy, 1980). Studies have shown that the results of learning style inventories can be used to create profiles that can empower students to become more successful participants in their own education (Fritz, 2002). There is extensive literature linking academic success with learning style-based teaching.

Therefore, the objectives of this research paper are to identify the learning styles of undergraduates in a private college besides suggesting ways to enhance learning process from among the undergraduates. It is also to correlate the leaning styles with ethnicity and gender.

The researchers will employ quantitative method to collect data by adopting The Barsch Inventory. The Barsch Inventory is a 24 item-instrument which is experimented to identify learning styles from among the respondents. In this research study, the respondents whom will be chosen randomly will be 100 undergraduates from a private college in Klang Valley, Malaysia. They will consist of three main races mainly Malay, Chinese and Indian between the age ranges 18-23.

The numerical data or scores obtained will be tabulated and presented in tabular form. The findings of this research study will hope to report the three different learning styles which are visual, auditory and kinesthetic.

INTRODUCTION

One of the most promising answers to more effective teaching is research on student learning styles (McCarthy, 1980). Studies have shown that the results of learning style inventories can be used to create profiles that can empower students to become more successful participants in their own education (Fritz, 2002). There is extensive literature to show that considerations of learning styles are important in the educational process (Sizemore &Schultz, 2005).

In today's educational world, it is important that the instructors/lecturers understand their students learning styles to ensure a more successful teaching. A typical classroom in a private college generally tends to consist of more than 25 students per class what more if it is a mass lecture than a class could easily be more than 100 students. Getting through to each and every student that's in the class will definitely be a problem to the instructors/lecturers and this could frustrate the instructor/lecturer to some extend.

Understanding the students learning style is one way to getting through to the students. This will ensure the instructor/lecturer gets the students' full attention and the students understand what is being taught easily. This is because the teaching synchronizes with the student's learning style. Some researchers believe that when an individual is participating in a learning task, the learning is usually accomplished mare rapidly and retained longer if it is presented in ways that the individual prefers (Claxton and Ralston, 1978).

Each student comes to class with certain learning experiences, expectations, and needs that have to be addressed and to which instructors/teachers need to be sensitive. This will help maximize the students' learning experiences. Part of the student's learning problems can be traced to the difference in his/her learning styles (Martin & Potter, 1998). It is imperative that instructors/teachers understand or know their students learning styles. Matching learning styles with teaching styles is particularly appropriate in working with poorly prepared students (Claxton & Murrell, 1987).

Learning styles, as defined by the National Task Force of Learning Style and Brain Behaviour defines the construct as (in Durodoye & Hildreth, 1995)

> that consistent pattern of behaviour and performance by which an individual approaches educational experiences. It is the composite of characteristic cognitive, affective and physiological behaviours that serve as relatively stable indicators of how long a learner perceives, interacts with, and responds to the learning environment. It is formed in a deep structure of neural organization and personality which molds and is molded by human development and the cultural experiences of home, school, and society.

These conceptions of learning are important because of the evidence that they have strong influence upon the study approach students use for a particular study tasks (Kember & Gow, 1994). The way a student learns is very important and an instructor/lecturer must be aware of his/her student's learning style preferences in order to plan teaching strategies effectively. Instructors/lecturers need to understand the learning differences in each student to better manage and help them become better students.

Knowing the learning style of one's students can be beneficial in several ways. The instructor/lecturer can orient his/her lecture toward those students with model learning style keeping in mind that some students may be at a disadvantage. By varying the explanations, the instructor can reach larger proportion of students. Knowing the learning style can also be very helpful when working on an individual basis with the student. Students should know their learning styles in order to make better use of their study time (Bell, 1998).

Purpose of the Study

There are many variables that affect the learning styles of a student. In this study, two common variables were taken into consideration i.e. ethnicity and gender (Sizemore & Schultz, 2005). Using a Brach Learning Inventory, the study proposes to describe the learning styles of students and to correlate the learning styles with ethnicity and gender. Therefore, following is the objectives of this research paper:

1. to identify the different learning styles between male and female students
2. to identify the different learning styles from among the Chinese, Indian and Malay students
3. to suggest effective learning methods for students
4. to suggest effective teaching methods from among the instructors/lecturers

METHOD

The Brach Learning Inventory was administrated to 100 private college students pursuing a foundation or diploma programme in communication at a private college located in the Klang Valley, Malaysia. The Barsch inventory was given to 50 male and 50 female students that were randomly chosen from a group of 198 students. The etnicity breakdown was 36 Chinese, 32 Indians and 32 Malay students.

The Barsch inventory is a 24-item instrument that takes approximately 10 to 15 minutes to complete. Each statement is assigned a numerical value, and these are used to determine the scores. The three learning styles are visual, auditory, and tactual were tested using this instrument. A score is determined for each learning style. For example, a student could have a visual score of 34, an auditory score of 26, and a tactual score of 18. This student would be considered primarily a visual learner with some cross over to auditory learning.

Visual Preference Style (VPS) learners learn by seeing images, taking in what they hear and translating it to images in their brain. They prefer written instructions, finding verbal instruction harder to understand. Auditory Preference Style (APS) learners, on the on the hand, find written instructions hard to understand, preferring verbal assignments as opposed to written. Tactual Learning Style (TPS) learners, who tend to be restless in classroom situation, learn best by engaging in hands on situation (Bell, 1998).

The data was tabulated using percentages and is presented in the form of a bar and pie chart.

RESULTS

The predominant learning styles for the female students were visual, followed by auditory and tactual. Chart 3 illustrates these findings. Seventy-seven percent of the female students showed a preference for visual learning style. This means that the female students make every effort to study what they see. They have a tendency to write down,

take notes and prefer written directions. They also prefer reading and are skillful in developing charts, graphs and diagrams.

The male students had a more diverse representation i.e. auditory style and visual style. Chart 4 illustrates these findings. Fifty-eight percent of the male students prefer a more auditory learning style where it involves listening to lecture more than taking down notes. They also show a strong interest in listening especially to explanations by the instructors/lecturers. The other forty-two percent of the total male students are visual learners. These students are more keen in reading academic materials such as lecture notes besides taking down notes.

Interestingly only 4 female students seem to prefer tactual style and no male students showed any preference for tactual style. Chart 1 summarizes these results.   Tactual learning style is when students learn by doing or when they engage in "hand on" activities (Bell, 1998). These students learn best in labs or with hands on models.

When learning styles were analyzed by ethnicity, the Chinese students were predominantly visual, followed by auditory and tactual. The Indian students were also largely visual, followed by auditory. Interestingly, the Malay students showed equal representation in visual and auditory learning style. Both the Indian and Malay students did not favour the tactual learning style. Chart 2 illustrates these findings.

Table 1: Gender, Ethnicity and Learning Style

	Females	**Males**	
Ethnicity			
Chinese	20	16	
Indian	18	14	
Malay	14	18	
Learning Style			
Visual	40	20	
Auditory	8	28	
Tactual	4	0	

Chart 1: Gender and Learning Style
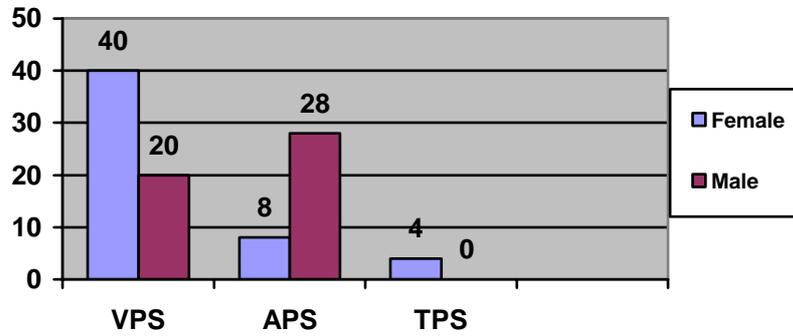
Chart 2: Ethnicity and Learning Style
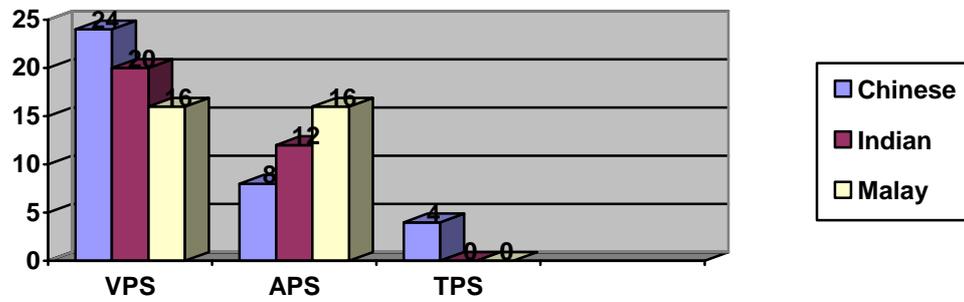
Chart 3: Females and Learning Style
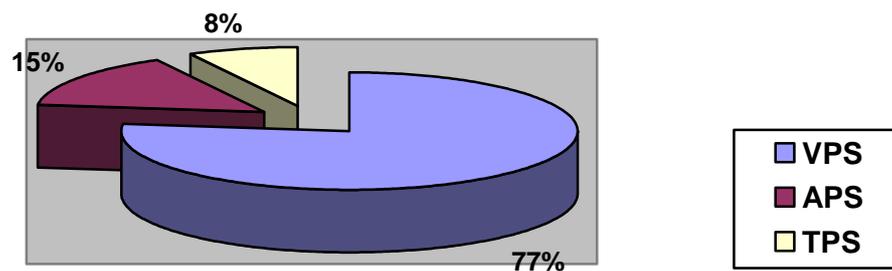
DISCUSSION

Dunn and Griggs (in Sizemore &Schultz, 2005)
> identified four variables that significantly differ among groups and among individuals within specific groups: academic achievement, gender, age and the processing of new and difficult information. Female and male students learn differently.

The study conducted by Sizemore &Schultz, 2005 also found that there was a significant difference in the learning styles of female and male students. In this study, the findings indicate that female students prefer a visual learning style and male students prefer an auditory learning style. Generally, female students are more diligent when it comes to education whereby concise notes taking and recording events are what they do best.

Male students on the other hand, tend to study better by listening or paying attention to what is being said. Male students have indicated that they understand better when they listen to their lectures. Almost half of the male students have showed preference for visual learning style. These male students tend to utilize both visual and auditory learning styles. Both female and male students showed no preference for tactual learning style.

A review of the literature has found that learning styles are probably influenced by culture and gender. The difference in the learning styles of the Chinese, Indian and Malay students is probably an influence of their culture. According to Durodoye & Hildreth (1995) discussion of "culture and "learning styles" are essential in understanding how children of different races learn. According to Shade (1989) in (Durodoye & Hildreth, 1995) the definition of culture
> by defining culture it as "a group's preferred way of perceiving, judging and organizing the ideas, situations and events they encounter the their daily lives". Guidelines used by individuals to select information to which they attend and to interpret given information are also determined by culture. It is only natural to assume that culture would affect how children learn.

Relevant studies also provide evidence that conceptions of learning, teaching and knowing are deeply rooted in specific cultural antecedents and social structures. Another reason could be the Malaysian education system itself that stress on the testing of your memory which requires adopting a visual learning style. The Chinese students showed a predominant preference for visual learning styles, followed by auditory learning style. This could be due to the root of the Chinese community where they stress on rote learning and examination culture which emphasizes on memorizing and understanding based on visual learning style. The Malay students showed an equal representation of visual and auditory learning styles. The Indian students showed a preference for visual learning style followed closely by the auditory learning style.

CONCLUSION

Learning style can also be viewed as a "distinct and habitual manner of acquiring knowledge, skills, or attitudes through study or experience". The student by understanding his/her learning style becomes more in control of himself/herself learning process. They will become more independent and responsible learners.

The more a student understands about her/himself the greater self-esteem and confidence s/he will have. Students learns easier when they receive information in the same manner as they process information (Martin & Potter, 1998). It is most useful for educators to understand the importance of learning styles.

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Appendix

BARSCH LEARNING STYLE INVENTORY

To gain a better understanding of yourself as a learner you need to evaluate the way you prefer to learn. We all should develop a learning style which will enhance our learning potential. The following evaluation, based on the "Barsch Learning Style Inventory", is a short, quick way of assessing your learning style. Thus, the objectives for this study are:
1. to gain an understanding of the basic learning styles;
2. to assess your own learning style; and
3. to offer some study hints appropriate for your learning style.

AGE	18-20	21-23	24-26
GENDER	FEMALE	MALE	
RACE	CHINESE	INDIAN	MALAY
COURSE PURSUED	FOUNDATION	DIPLOMA	DEGREE

ASSESSING YOUR LEARNING STYLE

Place the point value on the line next to its corresponding item number.

Please check the appropriate line after each statement.

SCORING PROCEDURES

OFTEN = 5 POINTS   SOMETIMES = 3 POINTS   SELDOM = 1 POINT

		Often	Sometimes	Seldom
1.	Can remember more about a subject through listening than reading.			
2.	Follow written directions better than oral directions.	⎯	⎯	⎯
3.	Like to write things down or take notes for a visual review.	⎯	⎯	⎯
4.	Bear down extremely hard with a pen or pencil when writing.	⎯	⎯	⎯
5.	Require explanations of diagrams, graphs or visual directions.	⎯	⎯	⎯
6.	Enjoy working with tools.	⎯	⎯	⎯

7. Are skillful with and enjoy developing and making graphs and charts.

8. Can tell if sounds match when presented with pairs of sounds.

9. Remember best by writing things down several times.

10. Can understand and follow directions on maps.

11. Do better at academic subjects by listening to lectures and tapes.

12. Play with coins or keys in pocket.

13. Learn to spell better by repeating the letters out loud than by writing the word on paper.

14. Can better understand a news article by reading about it in the paper than by listening to radio.

15. Chew gum, smoke or snack during studies.

16. Feel the best way to remember is to picture it in your head.

17. Learning spelling by "finger spelling" the words.

18. Would rather listen to a good lecture or speech than read about the same material in a book.

19. Are good at solving and working on jigsaw puzzles and mazes.

20. Grip objects in hands during learning period.

21. Prefer listening to the news on the radio rather than reading about it in a newspaper.

22. Obtain information on an interesting subject by reading relevant materials.

23. Feel very comfortable touching others, hugging, handshaking, etc.

24. Follow oral directions better than written ones.

BARSCH LEARNING STYLE INVENTORY
SCORING PROCEDURES AND EXPANATIONS

Place the point value on the line next to its corresponding item number. Next and the points to obtain the preference scores under each heading.

Visual		Auditory		Tactual	
No.	pts	No.	pts	No.	pts
2		1		4	
3		5		6	
7		8		9	
10		11		12	
14		13		15	
16		18		17	
20		21		19	
22		24		23	
	VPS		APS		TPS

VPS = Visual Preferences Score
APS = Auditory Preferences Score
TPS = Tactual Preferences Score

If you are a VISUAL LEARNER, that is, you have a high visual score, then by all means be sure you see all study materials. Use charts, maps, filmstrips, notes and flashcards. Practice visualizing or picturing spelling words, for example, in your head. Write out everything for frequent and quick visual review. It is obvious you learn best when you SEE things… make it a point to see things.

If you are an AUDITORY LEARNER, that is, have auditory score, then be sure to use tapes. Sit in the front of the lecture hall or classroom where you can hear best and can review them frequently. Tape your class or lecture notes. After you read something, summarize it on tape or out loud. Verbally review spelling words, lectures or test material with a friend.

If you are a TACTUAL LEANER, that is, have a high tactile score, trace words, for example, as you are saying them. Facts that must be learned should be written several times. Keep a supply of scratch paper just for that purpose. Taking and keeping lecture notes will be very important.

INTEGRATING ROBOTICS STUDIES INTO SCHOOLS

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ABSTRACT

This paper reviews the need of robotics studies and implementing the use of robotics as an educational tool at all those age levels, and provides some useful tips and directions for facilitating robotics education. Robotics technology has explored into medical, industrial, military and space robots. As an introduction, some definitions and the rationale for types of robots are given. An introduction to transformation teaching and critical thinking in robotics studies will be highlighted. In other words, Robotics is a basic research field with a growing mandate to meet society's needs. An inadequate dependence on mimicking humans must be replaced by an outward looking, interdisciplinary effort that recognizes the importance of understanding the basic processes robots will do. Robotics restructured this way can overcome its focus on devices and become the technology that forces basic knowledge advances in processes, product design, manufacturing technology, and manufacturing organization. This paper will be concluded with the future development and benefits of robotics technology.

Keyword: Robotics, Robotics Technology, Robotics education, Robotics studies

INTRODUCTION

Robotics is a growing field that has the potential to, significantly impact on the nature of engineering and science education at all levels, from schools to Universities. We have evaluated our experiences as an educator in robotics technology and the use of robotics as an educational tool at the University College level.

We have been teaching robotics course at University College level and we are currently engaged in bringing the robotics education to secondary/ high school, including both students and teachers. Our experiences are based on designing and implementing a hand on experience in students. Robotics generally compiles knowledge in mechanical, electrical and computer science. In 1920, a Czech writer Karel Capek introduced the word "Robotics" in his play, Rossum's Universal Robot at a premier. In 1940, Isaac Asimov who is also known as father of robotics created the three basic law of robotics. **First Law:** A robot may not injure a human being, or, through inaction, allow a human being to come to harm. **Second Law:** A robot must obey orders given by human beings, except where such orders would conflict with the First Law. **Third Law:** A robot must protect its own existence as long as such protection does not conflict with the First or Second Law. Asimov's fiction even influenced the origins of robotic engineering, "Engelberger, who built the first industrial robot, called Unimate, in 1958. A robot is

defined as following by the Robotics Institute of America, the robot is a reprogrammable, multifunctional device/manipulator designed to move/ transport materials, parts, tools or specialised devices through various programmed motion for the performance of variety of task/ more known as multitasking. Robotics technology is expended in areas such as actuator & mechanisms, robot dynamics & kinematics, artificial intelligent, robot interaction, etc. Robotics technology has been explored into areas such as entertainment, medical, military, space, underwater, education, etc.

TRANSFORMATIVE LEARNING AND CRITICAL THINKING

Our primary goal is to provide a fun and positive experience with technology to secondary school / high school students, which will raise their interest and confidence level working in engineering field. LEGO (Mindstorms for Schools), offers the possibility to teach various scientific, mathematical and design concepts through the designing, building, and programming. Students can explore the areas such as mechanical design, kinematics & dynamics of robot motion, environmental factors, etc. This can be established using brain storming session in a collaborative environment. Emphasis is often placed on using computer technology as a tool for productivity and problem solving in a constructive and transformative learning environment. This will enhance critical thinking and promote higher order learning and thinking capabilities. Critical thinking develops a reflexive, automatic action over an issue. This requires "mental effort to think of and contrast the various courses of action" and often necessitates external support. Critical thinking and transformative learning can be cultivated in these students by raising vita questions and problems, thinking out of the box, well-reasoned solutions and conclusions, etc. This will help increase the understanding and reduce memorizing. We can enhance critical thinking and transformative learning by allowing the student to design, construct and test their own robots. We will be doing these activities in groups to cultivate teamwork and integrate communication between team members.

Next part of the question is 'How do we evaluate the students understanding in their particular subject?' We can have robot competitions or projects in designing, building, and controlling of robots. This can reveal to the teacher the development of students' knowledge and problem-solving skills. The problem-solving methods embodied in robot construction cannot be easily defined in terms of algorithms. Nor would it be easy for each student to specify an optimal problem-solving pathway for robot construction and programming. Instead, robot construction and programming present an open-ended problem space whereby "practice in such problems raises levels of confidence and generates a willingness to take risks in seeking solutions"

Students will be able to construct new knowledge and refined their thinking skills with regard to various programming, and design concepts. They can do this by self-assessing the computer programs they will be writing. They also can assess the program through examining and analysing the robots they will be building in their projects. This was a recursive and reflective process of students writing the program or design decisions. They can watch the robots in action, make refinements or alterations in their programming and then repeat the process until a viable solution is found for the problem incurred. This will enhance learning and thinking ability in a student.

STUDY: METHODS, QUESTIONS & CONTEXT

An inadequate dependence on mimicking humans must be replaced by an outward looking, interdisciplinary effort that recognizes the importance of understanding the basic processes robots. This is an important aspect in cultivating interest in robotics studies. Students have to realize robots are not to replace the human labour/ human operators in industries or other areas but its to facilitate humans in handling a job more efficiently and removing humans from the 4D's (Dirty, Dull, Difficult, Dangerous). Robotics, as an educational tool, allows students to learn in an active, constructionist environment, building physical objects and experience abstract concepts in intentionally meaningful ways. Research on the use of robotics in classrooms indicates that in addition to promoting problem-solving abilities and amplifying students understanding of scientific, mathematical, and design concepts (Druin & Hendler, 2000; Bauerle & Gallagher, 2003; Wagner, 1998), there is evidence to suggest that students with diverse learning abilities can benefit from working with robotic technology (Rust & Kramer, 2002).

The scope of the research deals on the use of robotics as an educational tool. The objective of the research is to study the students' knowledge development and problem-solving approaches to building and programming LEGO robots using new curriculum materials. The initial work with Logo learning in a constructivist environment formed the groundwork for research partnerships between the MIT Media Lab and LEGO Corporation (Martin, Mikhak, Resnick, Silverman & Berg, 2000), and subsequently with Tufts University and National Instruments. As a result of these partnerships, the ability for students to construct and program robots is making its way into school classrooms. One of Papert and Harel's (1991) major premises is that learners are most likely to generate new ideas when they are actively involved in problem solving that result in external representations. This research centred on the students' reactions and thoughts during their problem-solving processes.

For instructional, learning, and pragmatic purposes, we will be placing the students together in small teams to design, construct, and program their robots. Data will be collected in the form of student projects, reflective journals, observations, and video.

STUDY CHRONOLOGY

It is proposed; that we will be grouping the outcomes in four general phases. Each phase summarizes the chronologically studies of robotics technology in schools.

Phase one. The groups will be asked to read a short passage from Robotic systems: A guide to understanding the robots around us (LEGO, 1998). Each of the five groups (if there are 5 groups) will be assigned a different topic to read, summarize, and present to the rest of the class. Topics that can be included will be robot control, form, behaviour, reliability, and implementation. Students then will discuss the characteristics of robots, identifying them in everyday life. This exercises sets, the context of the project and allows the teacher and students to investigate a number of pragmatic reasons for building robots.

In order to provide students the required direction to successfully complete and monitor their performance, we will provide them with reflective journals. Students performance reflects on the roles of the various team members, problems encountered with possible solutions and outcomes noted, as well as group dynamics and time management.

In this phase first, it allows all parties to familiarize themselves with the equipment and typical construction tasks. Second, it generates a problem solving, activity that pushes the students to formulate solutions and reflect on them through the process of journaling. Third, it enables the teachers to adapt their instructional and observation strategies to more effectively describe the students' actions. Finally, it helps to define the situational environment (group, classroom, activity, observation) in which the learning and problem solving took place.

Phase two. The second major problem-solving activity is the designing and development of a computer program to control a robot's behaviour.

We will be introducing flowcharting to students to help them organize their programs on paper (pseudocode) before doing their work on the computer. We also will be introducing the students to some simple symbols of flowcharts. Students are encouraged to think that a program must loop repeatedly until all the conditions have been satisfied. Students then will create flowcharts and are asked to consider if flowcharting would help them program their robot.

Phase three. During this phase, the students will be focusing on making their robots. Teams are randomly assigned a chassis to build from the Subassembly Constructopedia (LEGO, 1999c), a book that outlines various chassis designs. Students are asked to describe the strengths and weaknesses of the particular chassis' designs with respect to speed, manoeuvrability, power, durability, and specific advantages; they also can take digital photographs of their completed chassis. This phase of the project requires students to engage in a detailed interaction with components of the LEGO kit. They also can develop an awareness of the relationship between gears, gear design, force, friction, and ratios. Such concepts are often made more accessible when placed in context of designing with LEGO (Martin, 1995).

Phase four. In this final phase, students will be given the option of refining or redesigning their robot vehicles constructed in the previous phase in order to complete the programming challenges.

The first question, 'How can LEGO robotics be successfully integrated into the technology and science components of the curriculum? This can be directly answerable by the overall achievements embodied in the students' work. It also indicates that technology integration using robotics and can produce challenging learning activities. Additionally, the collaborative and peer-supported learning environment enabled the students to develop individual expertise that they could then share with their group members and fellow classmates. Other curriculum decisions enable effective integration of robotic technology. The students learning in programming and algorithmic decision-making, is an example of a valuable instructional approach.

FUTURE DEVELOPMENT OF ROBOTICS TECHNOLOGY

What does the future hold for robotics? What is the next step, or the next technological boundary to overcome? The general trend for computers seems to be faster processing speed, greater memory capacity and so on. One would assume that the robots of the future would become closer and closer to the decision-making ability of humans and also more independent.

Indeed, the human skeletal and muscular systems are complicated for many reasons. For now, robots will most likely be manufactured for a limited number of distinct tasks such as painting, welding or lifting. Presumably, once robots have the ability to perform a much wider array of tasks. The voice recognition software improves such that computers can interpret complicated sentences in varying accents, we may in fact see robots doing our housework and carrying out other tasks in the physical world.

The most rapidly developing area or robotics technology is Nano-medicine. It is a branch of nano-technology which; includes the construction, repair, monitoring and control of the human body at the molecular level, using the various implements of nanotechnology.

Basically, this technology will be comprised of tiny nano-machines and programmable nano-robots meticulously engineered to the nanometer which will be able to operate on the human body with greater precision than ever before imagined. Once these machines are available doctors will have a way to conduct curative and reconstructive procedures at the cellular or

even molecular level. Having the ability to control machines at this scale will also diminish problems associated with deeply invasive surgery because, after all, having tiny robots working to cure oneself at the sub-cellular level is just as invasive as taking a medication or allowing the body's natural healing mechanisms to go to work.

Nanotechnology is still in its beginning stages but its possibilities are well within view. Now tiny nano-tubes have been developed, some with diameters of only a few nanometers or 50 000 times less than that of a human hair, which conduct electricity. These have the possibility of being used for microscopic circuitry, nano-robots and tiny supercomputers. Other possibilities of nanotechnology include molecular analysers that identify diseased genes and super thin synthetic materials with steel-like strength.

The other area where robotics is widely exploring is Tele-surgical robots. There are many benefits to this surgical system. For example, difficult surgical procedures will be performed more easily and routinely therefore certain procedures only performed by a few highly specialized surgeons will be performed by more surgeons at more institutions thus making these operations more accessible to patients. Another benefit to this new development is the reduction in the invasive nature of operations. Only tiny incisions need to be made for the small articulate robotic arms to perform the operation, reducing the risk of other complications.

The main problem now is the price. These robots are very expensive. Another factor needing improvement is the lag time from when the surgeon sees the scalpel move to when it actually makes the cut. The lag time must be less than approximately one fifth of a second or the surgeon is at risk at making a cut in the wrong place. There is a great deal of data being transmitted during the operation, most of which is created by the video, not the instructions for the robot, which takes some time to be processed. Now, the maximum distance from which the robot can operate is about 300 kilometres over a wired connection or 35 km via wireless connection.

CONCLUSION

This study is focusing on the integration of robotic technology into schools. Students will be working in small collaborative groups, in a constructionist-learning environment, on robot building and programming projects. Our research context is focusing on how we will be integrating robotics into the curriculum, and the development transformative and critical thinking in students' knowledge and problem-solving skills through the designing, building, and controlling of robots. Students will require to record and reflect on their learning activities. We are proposing that the teacher-researcher and researcher record their observations of classroom interactions and students' problem-solving behaviours. This data can reveal that learning and problem solving can be supported and enhanced when this type of robotic technology are used in the classrooms. In this method of studying, the students will move through a vast learning/problem-solving space in diverse ways and their conceptual understanding often fluctuated when asked to articulate and design incrementally more complex computer programs. Further research on the use of flowcharting as a scaffolding medium would help teachers understand how to incorporate more effectiveness in this instructional technique.

The opportunity to use robotics to stimulate learning and problem-solving offers children the possibility of realizing that computer technology extends beyond the reach of their knowledge.

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SOCIAL INTERACTIONS IN COMPUTER MEDIATED EDUCATION ENVIRONMENTS: REVIEW AND EVALUATION OF THEORIES

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ABSTRACT

This paper presents and evaluates various theories in the fields of Computer Supported Collaborative Learning (CSCL) and Computer Mediated Communication (CMC) with specific focus on social issues. The authors then introduce a conceptual framework representing a continuum of perceived sociability of CMC as defined by various existing social theories in the above fields. This need is becoming more evident as more mixed findings are being reported in recent years. The paper also encourages theory developers to develop new theories to address current problems in sociability of online environments.

Keywords: CSCL, CMC, Social issues, Sociability, eLearning, Online Learning

INTRODUCTION

Despite the recent intensive body of applied research in distance education, very few theories have been developed to address problems in online and computer-mediated environments (Salas et al. 2002). This paper reviews and evaluates dominant theories in the fields of Computer Supported Collaborative Learning (CSCL) and Computer Mediated Communication (CMC) with specific focus on social issues. In other words this paper discusses theories that have been applied in supporting social interactions and individual social needs in CSCL and CMC environments. It must be mentioned that this paper does not consider general learning theories, e.g. socio-constructive theory, or Vygostky socio-cultural theory, which describe individual's learning process. For information about the latter theories, the reader may refer to Salas et al. (2002) and Dillenbourg et al. (1996).

Aims and Significance

The main aim in reviewing theories with social focus is that by providing a comprehensive summary of all the theories the paper will facilitate development of more specialized theories for addressing current social problems in online collaborative learning contexts.

Campbell (1990) emphasizes the roles of theories as being useful to "predict some expected behaviors that will occur if their principles and guidelines are followed and consequently, those who follow a theory can maximize their research outcomes". Use of theory in information systems research in general, and in online education in particular has been addressed by Webster and Watson (2002) and Salas et al (2002) respectively.

As a result of recent increase in individuals participation in online courses, open universities and other virtual learning environments are beginning to regard effectiveness of such environments as their primary success factor (Stodel et al. 2006; Stacey, 2002). While technical issues from system developers' perspective were central foci in previous decades (Bonk and King, 1998; Turban et al, 2004), social and human related problems have started to become hot topics in recent years (Trimmel & Bachmann, 2004).

Researchers who study social problems in computer mediated learning contexts may sometimes find 'social', 'emotional' or 'socio-emotional' concepts substitutable. However, this paper distinguishes between the 'social' and 'emotional' interactions in CSCL, and to maintain social focus of this paper, the emotional-related theories are not discussed in this paper; and readers are advised to refer to Wosnirza & Volet (2005) instead.

REVIEW AND EVALUATION OF THEORIES

In a not so recent review paper in distance and computer mediated communication, Soukup (2000) analyzes and integrates contemporary CMC theories in order to present his critique on them. In that paper, he found that as most of CMC systems and environments have been developed based on exchanging just text messages, current CMC theories are limiting themselves on 'textual bias'. However, he believes that this one-dimensional view to CMC must be changed and developers and researchers must take three dimensionalities in cyberspace – video, audio and text- into consideration. Salas et al. (2002) describe five major themes in distance education. These are (i) definition of distance learning, (ii) identification of major learning theories, (iii) how collaboration can be achieved via distance learning, (iv) role of online learners, and (v) effectiveness of distance learning. In another study Wallace (2003) reviews research on interaction among teachers and students in order to better understand such interactions and what the future directions are. Lippicini (2006) examines recent developments in Computer Mediated Communications (CMC) research for education in order to address two major issues: (a) general CMC research in education and (b) factors affecting computer-mediated learning.

In the following section the existing theories are introduced followed by an evaluation of these theories with the aim of clarifying the extent each theory is capable of addressing current social problems in CSCL.

Social Presence Theory (SPT)
Social Presence Theory is most popular in describing theoretical foundations of CMC and CSCL fields. According to this theory, the capacity of medium in providing and transmitting personal feelings, nonverbal cues, body expression, and posture are considered as the degree of social presence, which distinguishes different mediums as personal or impersonal ones (Kreijns et al., 2004; Walther & Burgoon, 1992).

Short et al. (1976) define social presence as the degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships. According to Gunawardena (1995) social presence is defined as a quality of medium, implying that the more a person is perceived as a "real person" in mediated communication, the higher degree of presence is provided.

A significant number of researches have employed this theory to examine communication cues in CMC (Sia et al., 2002), to describe online interactions in distance learning (Tu, 2000) and its effectiveness (Richardson & Swan, 2003), to identify pitfalls in such environments (Kreijns et al., 2003) and to measure social presence (Tu, 2002; Kreijns et al., 2004; Kreijns et al., 2005) in order to propose new solutions and intelligent systems (Kirschner et al., 2004) in order to cope with the lack of physical contacts and facial cues.

Proponents of this theory within the CMC context generally agree that the less channels that are available to communicate cues, the less social presence the communicators will experience. This in turn will result in experiencing CMC as impersonal (Kreijns et al., 2003). However, Walther (1992) posits that interactions in CMC require more time comparing to the

face-to-face interactions. Baym (1995) and Wegerif, (1998) have challenged this idea, and have favored the idea that CMC can be both personal and social environment for participants.

Media Richness Theory (MRT)

The MRT was introduced by Daft & Lengel (1984, 1986) and is similar to Social Presence theory that initially was used to address traditional media such as telephone, face-to-face meeting and written documents (Rasters et al., 2002) and later on it was extended in the context of email, distance conferences and other CMC fields (El-Shinnawy & Markus, 1997).

Media richness is defined as the ability of information to change understanding within a time interval (Daft & Lengel, 1986). In both Media Richness and Social presence theories, face-to-face communication is considered as the richest media, which provides the ultimate presence for communicators (Lengel & Daft, 1988). In the other side of the richness spectrum, lean media is defined as channels of communication with less personal, and with little capability of transmitting information and human socio-emotions. According to Barkhi et al. (1998, also cited in Rasters et al., 2002), there are four criteria for classifying communication media along a continuum of richness to leanness: capacity for immediate feedback, number of cues, personalization, and language variety.

The MRT is used in some distance education studies. Kirschner & Kreijns, (2006) and Thatcher (2006) discuss students' interactions in online educational environments. They believe that face-to-face communication is the richest way of human interactions. Sun and Cheng (2005) have used this theory to examine the effect of the fitness of instructional content and media and concluded that using higher richness media promotes learners' performance and satisfaction. In another study Mortera-Gutierrez (2006) study the best and the worst e-learning practices and discuss findings based on MRT and social presence theory. However, more recent researchers express doubt towards some basic assumptions of the theory (e.g. D'Ambera et al., 1998). Researchers have also criticized this theory for being poor in helping organizations to choose among new media (e.g., El-Shinnawy & Markus, 1997). More specifically, some found MRT as not being capable of addressing some educational problem (Caspi and Gorsky, 2005).

Uncertainty Reduction Theory (URT)

According to (Berger & Calabrese, 1975), one of the main goals in initial interaction between strangers is reducing uncertainty through verbal or non-verbal information exchange. 'Information exchange' is the key concept in *uncertainty reduction theory* (URT). Higher level of information exchange leads to less uncertainty about one's partners. Berger and Calabrese (1975) define uncertainty reduction as collection and exchange of information that makes individuals and interactants to make judgment and prediction about others' behavior and attitudes.

'Level of uncertainty' is becoming a significant factor in examining interactions in computer mediated communications (Tanis & Postmes, 2007; Walther, 1995). Makitalo et al. (2004) argue that as there is a level of uncertainty between students in online environments. According to URT, lower uncertainty might increase the amount of discourse and decrease information seeking. These researchers chose a corporate script for their study as they believed corporate script might reduce uncertainty and therefore enhance online discourse. However, their results show that the uncertainty-reducing script in fact increased the amount of discourse and decreased information seeking activities. However, results revealed that unscripted and more uncertain condition led to better learning outcomes.

While URT was initially developed to predict people's face-to-face behavior and how their uncertainty can be reduced, different interpretations of its applicability in CMC is available in

the literature. In one side, Tidwell and Walther (2002) discuss uncertainty reduction in computer mediated information exchange and found that CMC has capabilities and potentials to reduce uncertainty of communicators through online information exchange and emoticons. In the other side, *cue-filtered-out* approaches contend that as CMC lacks in providing face-to-face interactions and nonverbal cue, it cannot effectively and completely support *media richness theory*, exchange information and thoughts between communicators (Lea & Spears, 1995).

Social Impact Theory (SIT)

According to the SIT social influence that an individual exerts on others depends on several factors including immediacy and strength (Latane, 1984). The former addresses physical proximity and presence of barriers or filters separating influences from their target(s) and the latter describes the perceived power of that influence. Based on the SIT, Latane and others have conducted studies to examine prediction of group behavior by computer simulations, in which both positive and negative opinions for description of 'strength' are analyzed (Nowak, Szamrej & Latane, 1990).

This theory aims to describe the direction and the way people influence each other in four levels: (i) 'consolidation' represents a reduction in the number and diversity of minority positions; (ii) 'clustering' is formation of regional subgroups; (iii) 'correlation', the association of originally unrelated opinions; and 'iv' 'continuing diversity' results from the fact that clustering prevents consolidation from wiping out minorities (Lippicini, 2006).

Recently researchers have started to extend SIT in different CMC applications ranging from assessing ease of use and usefulness of technology (Karahanna & Straub, 1999) to describing social interactions in computer mediated communications (Hiltz, 1997; Latane& L'Herrou, 1996; Lippicini, 2006). It is interpreted that in traditional communications, people interact in close proximity to one another with few filters or barriers. But in the other side, in distance communications it tends to be low in proximity and in strength and consequently the theory predicts that individuals have greater social influence face-to-face than via CMC (Citera, 1998, cited in Lippicini, 2006).

Therefore, the theory assumes that computer medium has more communication barriers than face-to-face communication, and consequently it causes less influence with less strength. There are some concerns about such argument. First, it seems that the 'influence' in relations are considered just as a negative impact. However, in situations with positive impacts face-to-face has fewer barriers and it should have more positive influence than CMC. The second concern is about concepts of 'barrier' and 'proximity'. Proponents of this theory within the CMC community argue that under SIT computer mediated environments are sociable, and yet they come short in describing this paradox in a medium with more communication barriers and higher sociability. More research and empirical studies are needed in order to examine predictions of this theory, and more specifically, extend the theory to the field of distance educational applications.

Social Information Processing Theory (SIP Theory)

Like other cue-filtered-out theories, *social presence* and *media richness* theories concentrate on the lack of non-verbal cues and personal relations in computer mediated communication. Walther on the other hand introduces his SIP theory by suggesting that participants in online discussions develop individual impressions of others through accumulated CMC messages and interactions (Walther, 1995).

SIP theory is based on two critical factors that Walther believes are ignored in other CMC studies. The first factor is *Time.* He believes that the quality of fixed and impersonal relational communication in CMC may be strictly bounded by the initial interaction conditions among previously unacquainted partners, and that these effects should disappear over time. The second factor is *non-verbal cues.* He believes that although the cue-filtered-out approaches recognize that nonverbally transmitted messages are of great importance in communication, the actual non verbal messages of face to face groups in CMC research have been almost entirely ignored (Walther, 1992). He explains that relational communications change from initial impersonal and less social to more personal and social levels in CMC in four steps: (a) certain drives or *relational motivators*, may prompt communicators to, (b) develop distinctive impressions of other interactants by *decoding* text-based cues and (c) by driving *psychological-level knowledge* about other actors from CMC interaction. As this occurs, they (d) manage *relational changes* and *encode* relational messages in CMC" (Ibid, page 67).

The findings of Walther in the field of computer conferencing (Walther, Anderson & Park, 1994) and online education (Tidwell & Walther, 2002) confirmed that online groups developed their relations in several dimensions to more positive and uncertainty-reduction levels through time and that these subsequent levels approximated those of face-to-face groups. Gunawardena (1995) analyzes interactions in online collaborative learning and concludes that even though CMC is considered to be a medium that is low in social context cues, it can be perceived as interactive, active, interesting, and stimulating by conference participants. However, it is the kind of interactions that take place between the participants, and the sense of community that is created during the conference, that will impact participants' perceptions of CMC as a 'social' medium. Stacey (2002) studies small group interactions where collaborative learning is a central structure for learning to explore social presence as a key factor in facilitating effective online learning. She found that, supporting Walther's proposition, online relationships require longer time to be developed and even at the end of semester, students were motivated to keep and continue their social interactions and relations.

Although SIP theory is becoming popular mainly in CMC applications and online education and also more aspect of this context is being researched, few studies in the field of education have used it to draw their assumptions and to describe and interpret their findings. Gunawardena (1995) indicates that CMC environment is more sociable, stimulating, interesting and helpful in classes which are totally computer based, compared to classes that CMC is integrated with traditional classes. However, there is a lack of research in this context to describe and compare, based on SIP theory, participants' social interactions in purely and partially CMC supported classes.

The Social Identification/Deindividuation Effects (SIDE) Theory

The claims that information and communication technologies (ICT) have potentially harmful social effects, or CMC is less social than face-to-face interactions, are in doubt by SIDE theory. According to this theory such verdict is premature (Spears, Postmes, Lea, 2002). The theory extends self-categorization theory and makes group identity and norms salient (Lea and Spears, 1992). Soukup (2000) suggests that when individuals' group identity is salient (i.e. he or she is deindividuated or depersonalized) individuals are likely to comply with mediated group norms. Furthermore, the group identity and norms are maintained via the subtle and direct behaviors of group members, which create heightened group boundaries, and group membership (Ibid).

Spears et al. (2002) argue that there are always some exaggerations and strange predictions with any new technologies, and in the context of CMC, we need to appreciate how social and technological factors interact without privilege. They review SIDE predictions with university students and conclude that CMC can often be more social and socially regulated than face-to-face interaction. Rogers and Lea (2005) apply SIDE theory to examine social presence in distributed group environments. While supporting SIDE, they argue that in order to achieve social presence in online environments it is not necessary to emulate face-to-face conditions; rather a sense of belongingness to the group, or perceptual immersion in the group, can be realized through the creation of a shared social identity between group members (Ibid).

As Tanis and Postmes (2007) have also cited that the theory has not elaborated task related dimension and assessment of the medium of collaboration. In a recent study, Yao and Flanagin (2006) studied the effect of self-awareness in CMC, using SIDE and two other theories. As their findings do not support SIDE predictions, they argue that there are two implications for this theory. First, "that being aware of the social aspects of one's self is not the same as having a salient group identity", which means while role-awareness in a group is necessary for individuals, but it is not sufficient for a salient group identity. And second, however proponents of SIDE suggest little social information about others is enough for a group member to have a salient group identity, "it is unclear under what conditions people would be motivated to seek information about others. Could it be that although self-awareness may not directly influence an individual's social identity, it may determine the ways in which an individual seeks information about others?" In sum, although there have been some studies of SIDE theory in CMC (Postmes et al., 1998; Postmes et al., 2001; Spears et al., 2002), more empirical studies and real observations, specially in the distance education, are needed to test predictions of the theory and compare the findings with face-to-face communications.

DISCUSSION AND FUTURE DIRECTIONS

Reviewing existing social theories in online education will lead us to better understand the two main existing perspectives in this research area. Figure 1 shows a continuum of CMC theories ranging from being perceived as a medium from less to more social and personal ingredient.

The first perspective, also know as cue-filtered-out (Culnan and Bunz, 1987), contains those theories which believe CMC is an environment which lacks nonverbal and facial expressions. Social Presence and Media Richness theories are popular cue-filtered-out theories. These theories state that as the variety and number of communication channels and social cues are reduced, less social presence, personal and warm interactions will be perceived. Proponents of this perspective investigate ways to bring and simulate face-to-face communication rules and situations in CMC environment in order to facilitate social interactions and information exchange between communication participants. In the second perspective, some other theories, including SIDE and Social Impact theories, doubt cue-filtered-out assumptions about CMC and contend that computer mediated environments have the capability to be social and personal medium, in which not only individuals do not get negative and bad feelings, but also they can develop social relations with others and feel sense of community in their virtual groups and communities. Social Information Processing theory also supports this perspective and even claim that, in certain conditions, CMC may exceed face-to-face in sociability. To describe this new situation, Walther (1995) defines 'Hyperpersonal' relationships and describe that "CMC provides, in some cases, opportunities for selective self-presentation, idealization and reciprocation. This renders hyperpersonal communication, forms of interaction that exceed what we may accomplish FtF, in terms of our impression-generating and relational goals". And finally, some theories like URT have implications for both

discussed perspectives. In the other words, it is reported by both perspectives that uncertainty could be reduced in certain circumstances.
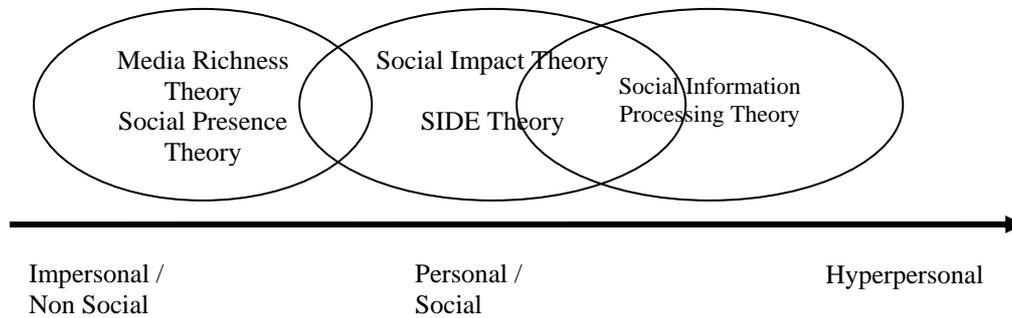

Figure 1: Continuum of perceived sociability of CMC defined by different theories

Previous findings make it clear that there is not a universal perspective to include all social aspects of computer mediated communication in educational or even other contexts. However, mix findings in sociability of CMC (Tanis & Postmes, 2007) lead us to conclude that a *'contingency'* approach should be taken toward analyzing social relationships and proposing solutions to facilitate social information and feelings exchange. This approach proposes that as human social dimension includes various hidden and unhidden aspects, different perspective might be used to cover social interaction in CMC environment based on communicational circumstances and environment, individual's characteristics and aims and purposes underlying collaboration.

Nevertheless, we raise the need for more specific and specialized theories in educational context. Currently, Information System (IS) researchers in general and CSCL researchers in specific, mainly rely on theories in other disciplines. This is because IS is multi-discipline by natural, however, as its application is rapidly developing in different fields, e.g. education, we need theories that address problems in every individual field. This need is also addressed by other IS (Webster and Watson, 2002) and CSCL researchers (Lippicini, 2006; Salas et al., 2002; Soukup, 2000), who called for more specialized theories development.

CONCLUSION

This paper provided a theoretical review of the social theories developed by researchers in the field of CSCL and CMC communities. These include (i) Social Presence Theory, (ii) Media Richness Theory, (iii) Uncertainty Reduction Theory, (iv) Social Impact Theory, (v) Social Information Processing Theory, and (vi) The Social Identification/Deindividuation Effects (SIDE) Theory. The paper then explained the two rival research perspectives behind these theories. The first perspectives, also known as the *cue-filtered-out* is based on the assumption that CMC is an environment which lacks nonverbal and facial expressions (e.g., Social Presence and Media Richness theories). The second research perspective (e.g., SIDE, Social Impact and Social Information Processing theories) contends that CMC has the capability to be both social and personal medium, in which not only individuals do not get negative and bad feelings, but also ,over time, they can develop social relations with others and feel sense of community in their virtual groups and communities; and in fact some (e.g., Social Information Processing theory) go as far as saying that CMC may exceed face-to-face in sociability. The authors then introduced a conceptual framework representing a continuum of perceived sociability of CMC s defined by various theories.

It is expected that this paper will assist future studies by facilitating comparisons among assumptions and findings of different research activities that are based on these theories. This need is becoming more evident as more mixed findings are being reported in recent years. Nevertheless, following other researcher reviewers in this context, the authors encourage theory developers to develop new theories to address current problems in sociability of online environments. This need is becoming more important as more studies report that offline perspectives and theories lack in meeting characteristic of the new medium and the nature of individuals interactions in this new environment.

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THE EFFECTIVENESS OUTCOMES OF STUDENT-CENTERED APPROACH INTEGRATION IN NURSING LEADERSHIP AND MANAGEMENT PRACTICUM: CASE STUDY IN ASSUMPTION UNIVERSITY NURSING STUDENTS

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ABSTRACT

This classroom action research aimed to explore the fourth year Assumption University nursing students' ideas, synthesize the inquired knowledge and skill, and explore the greatest benefit gained toward the implementation of student-centered approach in Nursing Leadership and Management Practicum at two hospitals. The data derived from three types of document comprising daily activity report; job analysis of unit manager's and charge nurse's responsibility reports; and incident case analysis report of forty students, focus group interview of twelve students and instructors' observation. Generic method of content analysis technique was applied for data analysis. The results showed that nursing students prepared themselves before studying by reviewing contents following instruction guideline. Students gained benefits from this style of teaching by receiving more knowledge than instructors' expectation, increasing management, analytical, problem-solving, and cooperative skills. But the most important benefit was they knew how to seek for knowledge and constructed it by themselves through CIPPA model which came from instructors changed their roles to be the encourager, facilitator, and coacher.

Key words: student-centered approach, nursing leadership and management practicum, CIPPA model

INTRODUCTION

After the Thailand's National Education Act of 1999 came into effect, there were changes of teaching-learning process as well as educational system. Furthermore, the details in Chapter 4 of the Act focuses on National Education Guidelines, of which the Section 22 is stated that "Education shall be based on the principle that all learners are capable of learning and self-development, and are regarded as being most important. The teaching-learning process shall aim at enabling the learners to develop themselves at their own pace and to the best of their potentiality" (ONEC, 2002). The Thai government provided large number of subsidy in education reform in order to improve the quality of education in Thailand and to fulfill the optimum goal of education reform that emphasized on developing super ideal learner to be the smart, good, and happy person (ONEC, 2000).

In education reform era, the reform covers all aspects including educational policy, management, teaching-learning, and learner. For teaching-learning aspect, new teaching innovation has been implemented especially the student-centered approach. In addition, classroom action research was conducted to assure and improve appropriateness of this teaching approach. As Assumption University of Thailand is Catholic University which

teachers believe in the opinion stated by Cardinal Poupard that "Education therefore aims not merely at information but rather at formation, at molding and shaping. In doing so, it touches and transforms both teacher as well as teaching. While learning can be imparted, formation imbibed. Not what the teacher teaches, but rather what he is that counts: not what is taught but rather what is caught that matters" (Srivichairatana, 2006). Furthermore, the adult learners in university have to learn how to seek for knowledge as teaching people to fish. So the student-centered approach has been integrated as a teaching methodology in the university because it can be trained students for their inquiry skills that will be sustainable with them for their long life.

Teaching-learning in nursing education is the process to prepare graduated nurses who have excelling in academic excellence and professional skills appropriately to care the clients and maintain healthy of people in the society. Basically, the process of teaching-learning consists of theory and practicum in the health care settings. From the seminar workshop of the Faculty of Nursing Science, Assumption University of Thailand, the vision was revised which stated the key words on students' competency including excelling in professional competence, meeting international standards, utilizing holistic approach for the client, having leadership, professional ethics, responsibility and accountability. The quality of holistic formation and life-long learning are core values of nursing faculty and graduates and needed to promote through student-centered approach (FNS Five Year Plan, 2005).

Division of Professional Nursing and Leadership has offered the course NS 4413 Nursing Leadership and Management Practicum every first and second semester for the fourth year nursing students. Knowledge related to Nursing Leadership and Management has grown rapidly in this decade. All professional nurses who work at every hospital in Thailand have to participate in Hospital Accreditation (HA) or Joint Commission International Accreditation (JCI). In addition, they have to work in other related areas comprising risk management manager and infectious control nurse in the unit. From these changes, the curriculum of Nursing Leadership and Management has to improve both theory and practicum in order to produce graduated nurses to work in the hospital in the new era effectively. The course enables the student to integrate theory and knowledge in planning as unit manager and charge nurse, and organizing as leader in infectious control team, risk management team, and total quality management team, demonstrate communication skills in health care team, client, and quality care team, collaborate with members of health care team in job delegation, assignment, and supervision, participate in administrative tasks related to treatment, and exercise leadership in nursing management and quality team. There have been many learning activities to accomplish these objectives including daily assignment, pre-post conference, ward round, shift report observation, and field trip (FNS, 2006). For the part of daily assignment, students have to observe and learn about unit manager's responsibility, learn and practice with charge nurse, and practice with risk management staff, infectious control staff, and total quality management staff. Then they have to submit daily activity report to teacher every day together with one job conclusion report to analyze the unit manager's and charge nurse's responsibility comparing with theory. For academic year 2006, the course coordinator set two areas for clinical practicum including Samitivej and Phayatai II hospitals where are top ten hospital in Bangkok, Thailand and two responsible teachers agreed to apply the student-centered approach as a crucial method for this clinical teaching.

Even the responsible teachers believed that the student-centered approach is appropriate in the education reform era. But the research conducted by Chimlek (2001) and Poonruksa (2005) found that it had many problems and obstacles during the implementation of this teaching-

learning style. For example; it was not appropriate for students who lacked of inquiry skill, analytic skill, and group working skill. In practical way, it has no evidence of student-centered approach application for the whole course of nursing subject in Faculty of Nursing Science, Assumption University of Thailand. So the effectiveness outcome of the integration of the student-centered approach is needed to examine in order to know both strength and weakness outcome of this approach. In addition, the research results would be used for further development of teaching-learning process in Faculty of Nursing Science, Assumption University of Thailand.

Research objectives

This research aimed to explore the fourth year Assumption University nursing students' ideas in three stages including i) Preparation stage, ii) Implementation stage, and iii) Evaluation stage of student-centered implementation, synthesize the inquired knowledge and skill, and explore the greatest benefit gained toward the implementation of student-centered approach for clinical teaching in Nursing Leadership and Management Practicum at Inpatient Department and Quality Center of Samitivej and Phayatai II hospitals.

LITERATURE REVIEW

It is accepted that, teaching-learning process shifts the focus from providing instruction to facilitating collaborative inquiry as a means of empowering students within the teaching and learning context (Stefani and Nicol, 1997). There are many teaching-learning approaches that teachers discuss as the "talk of the town", for example constructivism, brain-based learning, collaborative learning, and student-centered learning those highly concern that student as the center of learning.

There were many researchers giving the definition of student-centered in various ways for example; Thornberg (1995 cited in Poulou, 2005) defined student-centered learning as a discipline that involved the interaction of a team of students that experienced creative learning to be used in the real world. Eggen and Kauchak (1997) stated that with the student –centered approach, students do not passively receive input from teachers, but instead actively meditate it by trying to make sense of it and to relate it to what they already know about the topic. National Center for Research on Teaching Learning (1999) has defined student-centered learning as a learning model that placed the student in the center of the learning process and students were active participants in their learning by using their own strategies that needed intrinsic motivation and individualization. Malender (2002 cited in Poulou, 2005) explained that it focused on the approach whenever teacher coached the student toward the development of attitudes, skills, and behaviors as a learner decision makers, and participants with success measured of learner outcomes. Slunt and Giancarlo (2004) explained that student-centered learning involved actively the students in learning process rather than allowed the student to passively gather information from a delivered lecture in the traditional method of instruction.
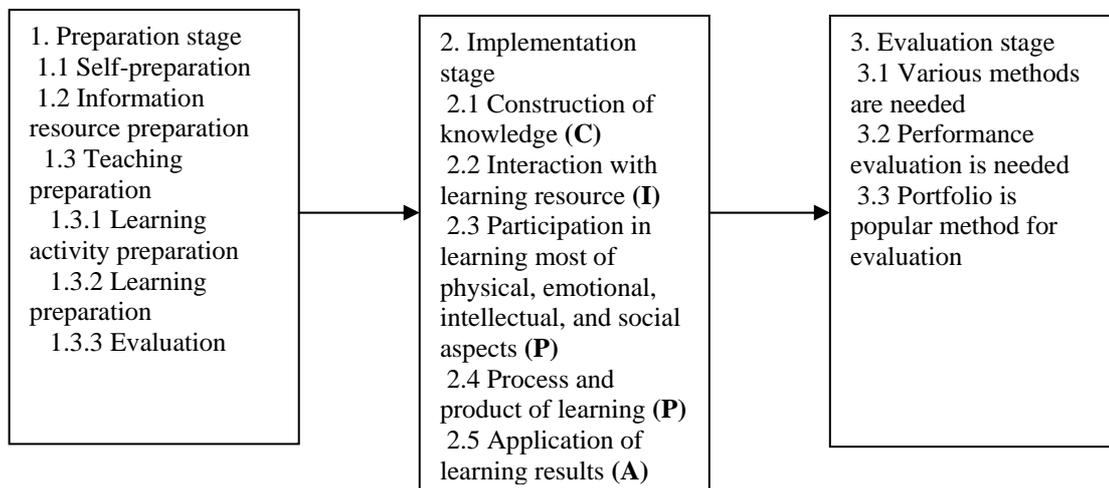
For this research, the student-centered approach was defined as self-studying which students took responsibility of learning to construct their own knowledge as needed as individual self-studying style with the teachers' instruction , guidance, supporting, and assisting in some parts as needed and could be measured through the students' perception.

The concept of student-centered is derived from Constructivism which Alan Shaw explained that this style of learning, students have to construct the body of knowledge themselves not only receive from the teacher as the traditional style. Shaw believed that knowledge could be formed, changed, and developed by learner. In addition, the component of instructing knowledge depends on 1) previous knowledge; 2) new knowledge; and 3) intelligence process (ONEC, 2002).

Sukkum (2002) explained the characteristic of student-centered approach into seven aspects which was similar to research finding by Poonruksa (2005) as the following;

a) Students took responsibility for learning, rather than passively received knowledge.

b) Students used resources to construct their knowledge, based on needs; these meant students must participate in positively identifying their learning styles and what they needed to learn.

c) Teachers provided students with clear expectations and desired outcomes before lessons began.

d) Students learnt how to learn by developing problem-solving skills, critical thinking, and reflective thinking.

e) Learning was considered in context of differences that accounted for, and adapted to the various learning styles of students.

f) Teachers guided and facilitated the learning process so that students encountered learning opportunities as they needed.

g) Teachers were responsible for their knowledge of content and of the learning process.

In student-centered approach, the roles of teacher and students include the preparation role, implementation role, and evaluation role as stated figure below which educator calls CIPPA model (Kaemanee, 2002).

| 1. Preparation stage
1.1 Self-preparation
1.2 Information resource preparation
1.3 Teaching preparation
1.3.1 Learning activity preparation
1.3.2 Learning preparation
1.3.3 Evaluation | → | 2. Implementation stage
2.1 Construction of knowledge **(C)**
2.2 Interaction with learning resource **(I)**
2.3 Participation in learning most of physical, emotional, intellectual, and social aspects **(P)**
2.4 Process and product of learning **(P)**
2.5 Application of learning results **(A)** | → | 3. Evaluation stage
3.1 Various methods are needed
3.2 Performance evaluation is needed
3.3 Portfolio is popular method for evaluation |

Figure 1: Student-Centered Process

From the stated model, students and teachers have the role to work with. In the preparation stage, students have to prepare themselves for learning by setting learning objectives and which resource that they should search for the inquired knowledge. The resource that they can find out more information for their learning should be noted. As same as teachers, they have to prepare the activity, content, and evaluation for their students' learning. In the

implementation stage, the students contact with learning resource directly. They have to construct their knowledge by interacting with resource person, participation with learning activity from their holistic aspects. Then they have to process former knowledge with the present knowledge. Finally, they have to know how they apply the knowledge into daily learning. The last stage is stage of evaluation. This stage, students have to be evaluated by teachers from a various style of evaluation techniques. In addition, they have to evaluate themselves whether their inquired knowledge meet their learning objectives or not.

Working hypothesis

The fourth year nursing students, Faculty of Nursing Science, Assumption University of Thailand would inquire knowledge as their stated learning objectives, knew how to seek for knowledge, and realized the advantages of student-centered approach.

Population and Sample

The population of this classroom action research was 40 of fourth year nursing students who registered in the course of Nursing Leadership and Management Practicum in academic year 2006. The document composing daily activity reports, job analysis of unit manager's and charge nurse's responsibility reports, incident case analysis report of forty students who learned in this subject as same as data from instructors' observation were involved for content analysis. The sample for focus group interview derived from twelve students who were simple randomized by researchers.

RESEARCH PROCEDURE

1. Researchers as teachers who taught this subject had meeting for explaining the concept of student-centered approach and how did we integrate it into the practicum course in both hospitals in the same direction.

2. Teachers integrated the student-centered approach to students by providing basic knowledge of each hospital as the learning resource area in this subject and being the consultant for them in order to find out further information based on CIPPA model as following stage;

2.1 Preparation stage

1.1 Self-preparation: Teachers oriented the course outline to students. Furthermore, the learning guideline of In-Patient Department and Quality Center were explained to students. For students, they made clear for course outline and learning guideline. In this stage, they planed the method to search for knowledge from three sources that composes of practicing in the real situation, talking with staff in the unit, and observing the staff's work.

1.2 Information resource preparation: The student attended the hospital orientation, which nurse director gave them the overview of each hospital, management system, and services to be the based line information before starting the practicum. Then, each of them was assigned to practice in one unit of IPD to work with both unit manager and charge nurse. In addition, they have to be assigned to practice with quality center's staff.

1.3 Teaching preparation: Teachers set the clinical teaching plan that composes of three activities; day by day site visit to assess whether the student constructed knowledge correctly or not, group conference weekly to let them share their gained

knowledge to the group, and wrap up session to provide clear understanding related to Nursing Leadership and Management. Details of students' activities were included in the daily activity report that all students had to submit to teacher everyday. These three activities provided a good opportunity for teachers to evaluate students as well.

2.2 Implementation stage: This stage the student participated with unit staff and work with him/her in the unit. They have to associate their old knowledge and new knowledge then try to construct their own knowledge by themselves. To catch up new knowledge, they have to do, learn, and observe how unit manager, charge nurse, and quality staff work. Sometimes, the discussion with resource person is needed. Along eight hours in each practicum day, the student had to participate with various activities that they could not expect. So problem solving skills and good relationship with unit staff are needed. After constructing their knowledge, it needs to write on daily activity report. During writing, it's the time that each student can review his/her constructed knowledge correctly before submitting to teachers. They may have opportunity to apply their constructed knowledge with unit team and client under supervision of unit manager, charge nurse, and quality center staff.

2.3 Evaluation stage: In this stage, teachers assessed students' outcomes from various methods. First, all reports were checked and feedback was provided point by point. Second, teachers observed each student how he/she find out more knowledge and provided suggestion for each of them. Third, conference and incident case report were implemented to enhance students' opportunity for sharing ideas related to Nursing Leadership and Management Practicum.

Data Collection

In this research, researchers employed the three types of data collection including documentary analysis for all students' reports, focus group discussion of twelve students, and students' performance observation by teachers. The method of focus group discussion consisted of step by step as the following;

1. Prepared open-ended question for group interview which was adapted from literature review and research objectives. There were questions including: a) How did fourth year nursing students plan for each stage of learning?, b) Did this plan go on as their prior ideas, and how?, c) What did the benefits gain from this style of teaching-learning?, d) What was the greatest benefit of this style of teaching-learning?, e) What were the teachers' and students' roles in this style of teaching-learning?, f) How did the students feel to this style of teaching-learning?, and g) How did the students suggest for this course in the future?.
2. Prepared material used for group interview including paper, pen, tape recorder, tape, chair and room.
3. Rehearsed group interview method with co-researcher
4. Appointed with samples for group interview
5. Took time two hours for group interview

DATA ANALYSIS

After completing group interview session, researchers wrote field note by listening from tape recorder word by word. To make sure that the data was valid, researchers did triangulation by comparing the field note record with the students' behaviors observed by teachers during practicum session, read all reports, and observed their conference and presentation. From the triangulation technique, researchers found that data was accurate. After that, researchers used generic method of content analysis by creating taxonomy from the interview statements in

field note, documentary analysis from reports, and data derived from observation. The analytic induction and iterative techniques were used to analyze data until they matched with the research objectives.

RESEARCH RESULTS

The important research results found that in the preparation stage, the fourth year nursing students who registered the course of Nursing Leadership and Management Practicum planned themselves before going to practice by reading the related contents for this subject, finding hospital information, and setting up their own objective for learning. Although the students planned in the earlier, they found that on the day of practicum, the plan had to be changed to fit with the current situation. However, the overall of practicum activities followed their preparation which showed by the following statements;

> *"At first I set objectives how I find out more information related to the requirement lists given by teachers. I go to read the hospital information from hospital's website and read book/handout of this subject. I know that it has many things that I have to learn. This time I have to practice with unit manager, charge nurse, and quality staff which I never contact them before. I have to think how I create good relationship with them so that I can learn more things from them."*
> *"Learning in this subject is quite new for me because normally teacher always stays with me and we do hand on hand learning. This time I have to learn from unit staff. I know that teacher would like to train me and my friends to be adult learner as we're nearly graduation. I realize that I have to stand on my feet. So I try to understand the course requirement and think that how can I meet all requirement by myself. I set the question to ask unit staff for each requirement. For example, what is the job assignment style used in the unit? Sometimes I have to change my prepared questions because the situation that I face is changed from my expectation."*

In the implementation stage, students used four methods for seeking knowledge composing practicing with unit staff, discussing with key informants, observing how staff works, and reading the unit's document. Then they associated the new knowledge with the prior knowledge that they learned in the classroom and wrote it in daily activity report. During writing report, it was the time to review and add more information from their understanding. To confirm the correction of gained knowledge, students presented it in the weekly conference in which they could share their knowledge to other friends and teachers. Along 20 days of learning, they could recheck and add more knowledge by interacting with unit staffs for their works. It seemed that their implementation stage was followed CIPPA model as shown by the following statement;

> *"I attend shift report and unit manager's morning brief. Unit manager let me ask her if I would like to know anything in her unit. Sometimes, she is busy and has to go for meeting, so I change my plan to find out more information from observation how staffs work and try to work with them as much as possible."*

> *"I practice in medical-surgical unit and all staffs are busy along their shift. I realize that if I disturb them by asking those more questions, it'll be caused clinical risk in the unit. So I have to observe their works and discuss with them later. I take note the new thing that I know and try to link with my old knowledge. I have a chance to*

practice the new thing that I just learn with the team, so I can understand it more. Teacher set weekly conference that I can share my experience with my friends. By this activity, I can gain more new knowledge that my friends and teacher try to shape me for more understanding. If I learn it alone, I may not know more things like this."

In the implementation stage as well, researchers observed that the students' gained knowledge was more than researchers' expectation. Students started to learn for each course requirement then they explored more knowledge up to their needs. For example, they constructed knowledge related to unit manager' and charge nurse's responsibility that were not only four areas of management including personal, budget, material, and system management. In addition, these two leaders had to be change agent, policy maker, and role model for their staffs. They were also responsible for risk manager and key person for infectious control in the unit. For the quality control staff, they were all nurses who got training and had more experiences in this field. They had to create the activity to improve, maintain, and assure the quality in each unit of the hospital. They worked as a team and coordinated with unit staffs for unit quality assurance. These all knowledge were up date by practitioners who were expert in that field and would not include in any textbook in the world, except students had to catch it up by themselves.

In the evaluation stage, students stated that teachers assessed their performance from various methods including reading all kinds of reports and providing feedback to most of them. Furthermore, observation and discussion were implemented to initiate more suggestion to students day by day. The various styles of evaluation as shown by the below statements;

"Teacher corrects my daily activity report and provides feedback to me directly. With this method, she always writes the questions to guide me for the next day of learning. She observes my works randomly and takes on her note. I like the way that she opens her mind frankly to discuss in every point that I' m not quite clear."

"I notice that teacher comes to visit me with so many styles. I cannot guess what time she will come to visit me. She always comes with a plenty of feedback to my way of learning. She never makes me upset but always challenges me with her bright eyes. She give more situations related to the subject and let me think. Sometimes I cannot reply her question suddenly as I' m a novice. But she never feels bored with my behavior, and supports me that I have more time to learn in this point."

The students stated that the benefits gained from the integration of student-centered approach in Nursing Leadership and Management Practicum were elaborate knowledge receiving from the two hospital areas. The students were satisfied with the additional knowledge because they never learned it from the classroom and any book. Furthermore, the students cooperated with health care personel that practiced them for team working skills, and had good attitude toward nursing profession. Not only these benefits gained but also practicing leadership and follower skills were noted. More benefits the students received as mentioned above were less important comparing with the most benefit of true knowledge getting from real experiences as they would like to know and knew how to seek for knowledge as well. These all benefits are shown by the following statements;

*"I gain more benefits from this practicum such as additional knowledge that
I cannot read from the book or learn from teacher in the class. On the
other ways, I learn how to work with unit manager, charge nurse, and quality center
staff. From this time of learning, I know that nurse has to work more than my
expectation and they have more knowledge that nurses have to learn in their daily
works."*

*"This course I use myself as the center of learning and try my best to seek for new
knowledge. Something is very new and without this learning style I may not know. I
realize that knowledge stay in any where, just I intend to seek it, and it with be with
me longer than teacher feeds me. It because I catch it by myself as I want to know, try
to understand it, and keep it in my mind as the way I want that may be different from
my friends' way."*

In addition, students mentioned the role of teacher in this practicum as encourager, coacher,
and facilitator. They appreciated this style of learning which made them more mature than
traditional style of learning. They would like teacher implementing the student-centered
approach in another subject. The student's ideas as shown by the below statements;

*"I really like this style of learning because it practices me to be the mature people
that tailor how I should learn by myself. Teacher just comes to visit me and asks me about my
plan. She challenges me with the question and lets me take time to find out the answer. She
always says that it no right or wrong for my way of learning. She suggests me the source that
I can seek more knowledge. Sometimes she adds me more knowledge to let me understand my
point of view clearly."*

*"I never learn as this style before but I think it could be very nice if teacher
implements it more for another subject. Teacher comes to see me everyday and provides
feedback for my daily report which I can learn more from her and know which channel that I
can use for seeking new knowledge. She always admires me when I present her about my plan
and what I learn in the unit. With her new style of teaching, it makes me confidence to work
with unit staffs and challenges me to search for more information. I would like her to
maintain this style of teaching-learning for the next batch because it makes me open my point
of view that I can learn everything in this world with my real ability."*

CONCLUSION

The case study related to the effectiveness outcome of student-centered approach integration
for Nursing Leadership and Management Practicum was conducted among fourth year
nursing students which aimed to explore the fourth year Assumption University nursing
students' ideas, synthesize the inquired knowledge and skill, and explore the greatest benefit
gained toward the implementation of student-centered approach in Nursing Leadership and
Management Practicum at two hospitals. From the research results mentioned above, it
showed that this style of teaching helped students to develop the method to search for
knowledge as teachers taught them for fishing because the roles of teachers were encouragers,
coachers, and facilitators. Furthermore, students not only gained more elaborated knowledge
but also learned to work as a team with hospital staff. However, this approach had weak point
which related to inappropriate students' characteristics such as inactive behavior, could not

construct new concept from new gained information in the first week of learning as same as the previous researches by Chimlek (2001) and Poonruksa (2005).

This research was initiated from the teacher-researchers who taught Nursing Leadership and Management Practicum because we would like to know the results of the integration of student-centered approach for practicum in this subject which was the first time of full implementation in Faculty of Nursing Science, Assumption University's curriculum. From research results, researcher had some notices that the integration of student-centered approach would not succeed if the teachers still fixed ideas of the teaching style as in the traditional model. The most important factor effecting on the success of this approach was that teachers have to understand "what does student-centered really mean" and followed this concept effectively. For the implementation of student-centered approach into practicum and other activities for every subject, it is very important for teachers to motivate students to work as they own way to seek for new knowledge. In addition, the positive view toward students is very important. Teachers have to think that all students have potentiality to construct their own knowledge. And teachers just are people who shape up them to learn in the direct way. From the above benefits gained, researchers would like to suggest that student-centered approach should be implemented in advance in nursing education as a life long learning and the research should be conducted in order to examine the effectiveness of the approach and used it as the essential data for the next time of this approach's implementation.

Acknowledgement

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ASSESSING THE IMPACT OF A GUIDED FIELD TRIP IN ENHANCING STUDENTS' LEARNING

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ABSTRACT

This study aims to assess the role of a guided field trip in enhancing students' learning. It provides an insight into the students' perception of whether their learning experience, as a result of the guided field trip, had enhanced their knowledge and skills. The study also explores whether or not guided field trips can be employed as a teaching and learning methodology in promoting deeper and more authentic learning. It is a quantitative study that uses a specifically-designed questionnaire to elicit information with regards to the overall effectiveness of the guided field trip, in terms of its organisation and the role played by the facilitators, on the learning experience and skills attained by the students. The findings show that the students perceive the guided field trip as an effective tool in increasing their ability to understand business theories and concepts taught in classrooms as well as in enhancing their skills and knowledge. The lecturers were also perceived to have played an effective role in enhancing students' learning during the field trip. This concurs with literature on the important role played by the facilitators of field trips in enhancing the potential for learning amongst students. It is hoped that the findings obtained from this study will provide institutions of higher learning and their respective faculty members a set of considerations for making guided field trips an integral part of the subject curriculum in business studies.

Keywords: Guided Field Trip**,** Teaching and Learning Methodology, Learning Experience, Students' Learning

INTRODUCTION

This study investigates the impact of field trips on students' learning. It provides an insight into how students view the role that a field trip has on their learning process, in terms of enhancing their knowledge and skills. The objectives of the study are to find out the influence of both the organisation of the guided field trip and the lecturers' attributes (those who facilitated the guided field trip) on the students' learning experience and skills attained.

A field trip to the PROTON plant (Malaysia's very own automobile manufacturer) was organised for the students of the University of the West of England (UWE) programme and also the Taylor's Business Foundation (TBF) programme on 12[th] April, 2007. This exercise was carried out as a mode of implementing student-centred learning in the programmes concerned. The guided field trip was carefully planned and organised and it involved three stages; the pre-trip, "during-the-trip" and post-trip stages. The pre-trip stage activities included a brief overview of the site to be visited, whereby the students were given a preview of the site through a video presentation; a set of questionnaires and guidelines that would help them to focus on the business concepts and theories that they were going to learn and experience during the trip itself, and the detailed coordination between the lecturers, students

and the field site managers. The students were briefed during the pre-trip stage about what was expected of them during the field trip. The post-trip stage involved a debriefing session that involved discussions of the students' overall experience of the guided field trip and the answers to the questionnaires given prior to the trip. This was done to reinforce the knowledge that the students had gathered during the field trip. The students were also asked to write a reflective journal of their field trip experience. It is important to note that what happens before and after a field trip is as important as what happens during it. Numerous studies have shown that the success of field trips require much careful planning and organisation to ensure that the best setting is put in place for effective learning to take place. (Myers.B and Jones.L 2004; Pasquier.M and Narguizian P.J 2006; Kiesel.J 2006).

A number of brainstorming sessions were conducted with the students prior to the trip, to enable them to learn certain business concepts and theories that were connected to the field trip so that when they actually visited the site, they were able to tie together classroom lessons with the field visit to maximize their learning outcomes. As Nespor.J (2000) puts it "Field Trips are worth considering because they are distillations of the relationships of schools to the worlds outside their walls". Field trips are a method of engaging students in the learning process by giving them specific tasks to accomplish. As Johanne von Goethe best describes it "Knowing is not enough; we must apply. Willing is not enough; we must do". In order to ensure that students fully comprehend the business concepts and theories, they must be fully engaged so that there is successful application of theory to practice (Parr.M 2005/2006). Successfully engaging the students also requires the lecturers to be fully engaged in the pre-trip, during the trip and post-trip stages to enhance the collaborative learning that takes place, as it creates many possibilities for both students and lecturers to learn the various concepts and theories as they work through subject matter. Various researches emphasise the role that the facilitators of field trips play in enhancing the quality of learning (Kiesel.J 2006, Robson E. 2002). The facilitators' knowledge, dedication, commitment, enthusiasm and guidance play an integral part in ensuring that students benefit from the field trip. As Robson E. (2002) in her study on field courses puts it "students expressed much appreciation of lecturers' high levels of knowledge, enthusiasm, helpfulness and concern".

RESEARCH METHODOLOGY

The study involved a survey of students taking part in the guided field trip, from both the UWE and TBF programmes. A structured questionnaire was designed to obtain four types of information from the respondents, that is:

a. Their overall view of the impact of the organisation of the guided field trip on their learning process.
b. Their opinions of the lecturers' attributes and their role as facilitators of the guided field trip in enhancing the students' learning process.
c. Their opinions of how their learning experience, as a result of the field trip, had enhanced their knowledge and skills.
d. The general evaluation of the field trip.

A total of 61 students were taken into account in this study. 60.7% were females and 39.3% were males. 80.3% were undertaking the University of the West of England tertiary programme and the remaining 19.7% were undertaking the Taylor's Business Foundation programme. The Statistical Package for Social Sciences (SPSS) was used to process the data. The results were summarised using descriptive statistics such as frequency distribution, mean scores and standard deviations. The utilisation of factor analysis also provided useful insights into the various dimensions or constructs of the organisation of the field trip and the lecturers' attributes. The other statistical analysis tools employed included correlations, multiple linear regressions and the reliability test.

FINDINGS OF THE STUDY

This study reports the findings of the role that a guided field trip plays in enhancing the students' learning process and how their learning experience, as a result of the field trip, augments their knowledge and skills.

The Role of the Organisation of the Field Trip on Students' Learning Process

The majority of students perceived that the field trip was well organised. The questionnaires and guidelines provided prior to the field trip, had indeed enhanced their learning process during and after the field trip. The questionnaire also allowed the students to look out for the concepts and theories taught in the classroom during the field trip visit. The most important aspect of the overall organisation of the guided field trip was the pre-trip discussions and brainstorming held amongst the students and their lecturers. This provided a platform for student-centred learning to take place by placing the responsibility of learning on the students.

The use of Factor Analysis categorised the organisation of the field trip into three dimensions (Questionnaire/Guidelines, Overall Coordination and Organisation and the Pre-Trip Preparation) which accounted for 68.481% of the total variance explained in the criteria variables. The Cronbach's alpha showed that the categories were reliable. The level of 0.7 and above is considered reliable (Nunnaly, 1978). The variables involved are shown in Table 1.

Table 1: *The Factor Loadings and Selection of Relevant Variables (Field Trip Organisation Dimensions)*

Item	C1 Organisation of Questionnaire/Guidelines	C2 Overall Coordination and Organisation	C3 Pre-Trip Organisation
A2VAR10: As a result of the guidelines/ questionnaires given by the lecturers to the students prior to the actual day of the field trip, I was better prepared to learn during the field trip.	.797		
A2VAR03: The questionnaire was very helpful in preparing me for the field trip.	.723		
A2VAR08: The questionnaire provided to me before the trip allowed me to look out for the concepts and theories taught in the classroom during the field trip visit.	.716		
A2VAR02: A guideline (a set of tasks)/questionnaire was given to us on what was expected of us and this enhanced our learning process.	.685		
A2VAR01: The field trip was well organized.		.901	
A2VAR04: The field trip was carefully planned and coordinated.		.777	
A2VAR09: The field trip was coordinated well to ensure we understood the concepts and theories we learned in class.		.688	

Item		
A2VAR05: Some pre-trip activities were held to better prepare us for the actual field trip.			.860
A2VAR06: The pre-trip activities were well organized and implemented.			.845
Eigenvalue	3.367	1.504	1.292
% of explained variance	37.410	16.717	14.355
Cumulative explained variance	37.410	54.126	68.481
Cronbach Alpha	**0.7564**	**0.7515**	**0.7269**

1. KMO test = 0.715. The data has a fairly good fitting with the model.
2. Bartlett's Test of Sphericity. Sig = 0.000. Reject H_0. There is relationship between the constructs.
3. Value of Cronbach Alpha for all items for the 3 dimensions = 0.7787

The Lecturers' Attributes and their Role as Facilitators of the Guided Field Trip

The core attributes of the lecturers were perceived as being very important in enhancing students' learning in the guided field trip. These included the lecturers' dedication and commitment in guiding the students throughout the field trip. The enthusiasm and responsibility displayed by the lecturers also made the learning process more meaningful. The students found their lecturers approachable and this created a conducive learning environment before, during and after the field trip. The students were motivated to learn even the more difficult concepts and theories because of the rapport that was build between themselves and the lecturers as a result of the field trip. This concurs with literature on the important role played by the facilitators of field trips in increasing the potential for cognitive and affective learning amongst students. The lecturers were well-prepared with questionnaires and guidelines that were indeed effective tools in ensuring the learning process was fruitful.

The use of Factor Analysis categorised the lecturers' attributes into two dimensions (Core Attributes and Support Attributes) which accounted for 66.425% of the total variance explained in the criteria variables. The Cronbach's alpha showed that the categories were reliable. The variables involved are shown in Table 2.

Table 2: *The Factor Loadings and Selection of Relevant Variables (Lecturers' Attribute Dimensions)*

Item	C1 Support Attributes	C2 Core Attributes
A3VAR06: The lecturers were interesting and interactive throughout the guided field trip and this motivated me to participate and learn during the field trip.	.839	
A3VAR09: The friendliness and approachability of the lecturers have motivated me to learn even the more difficult concepts and theories associated with the field trip.	.814	
A2VAR07: I find the learning process to be meaningful because the lecturers were enthusiastic and responsible throughout the guided field trip (pre-visit, during-the-visit and post-visit).	.803	
A3VAR08: I felt comfortable to approach the lecturers when I had any difficulties in understanding the concepts and theories or in other matters because the lecturers were attentive and	.786	

supportive to my needs.		
A3VAR05: The lecturers were always there to guide me during the guided field trip.	.713	
A3VAR02: I found the learning process to be fruitful as a result of the guided field trip because the lecturers were well-prepared with the guidelines and questionnaires.		.865
A3VAR01: I gained a lot from the guided field trip (pre-visit, during-the-visit and post-visit) as the lecturers are knowledgeable in their subject area(s).		.797
A3VAR03: The lecturers were dedicated and committed in guiding me throughout the field trip.		.620
A3VAR04: I was motivated to participate and learn during the field trip because the lecturers were friendly, helpful and developed a good rapport with the students.		.548
Eigenvalue	4.705	1.273
% of explained variance	52.277	14.148
Cumulative explained variance	52.277	66.425
Cronbach Alpha	**0.8771**	**0.7682**

1. KMO test = 0.848. The data has a good fitting with the model.
2. Bartlett's Test of Sphericity. Sig = 0.000. Reject H_0. There is relationship between the constructs.
3. Value of Cronbach Alpha for all items for the 2 dimensions = 0.8788.

**The Learning Experience of Students on a Field Trip in Enhancing their Knowledge and Skills**

It was unanimously agreed that the guided field trip provided the students a chance to visit an automobile manufacturing plant that they would not have been able to go to on their own. It gave them a bigger, multi-dimensional picture of the production process in an organisation and it also brought lessons to life by bringing the students out of their classrooms and allowing them to experience hands-on activities that they could only otherwise learn in theory. These included the concepts of mass production, division of labour, economies of scale, elasticity, product differentiation, Scientific Management, the assembly line and Fordism to name a few.

The field trip was seen as a teaching and learning tool that provided the students with real-life opportunities and experiences that enhanced authentic learning. It was clearly perceived as a method to bridge the gap between theory and practice by giving the students an opportunity to connect face-to-face in "real-time" with "real people" in the business world and engaging in dialogues/discussions with the managers/supervisors of these businesses to learn about the different perspectives and issues faced by firms in a very competitive era.

The General Evaluation of the Field Trip

The students generally evaluated the guided field trip to be very good in that it was very effective in providing opportunities for discovering new knowledge. It was also perceived that the lecturers played an effective role in enhancing the students' learning prior to, during and after the field trip. The field trip was also perceived the as an effective tool in increasing the students ability to understand business theories and concepts taught in classrooms as well as in enhancing the skills and knowledge they gained thereafter. (Please refer to Figure 1).

Figure 1: The General Evaluation of the Field Trip (Mean Scores)
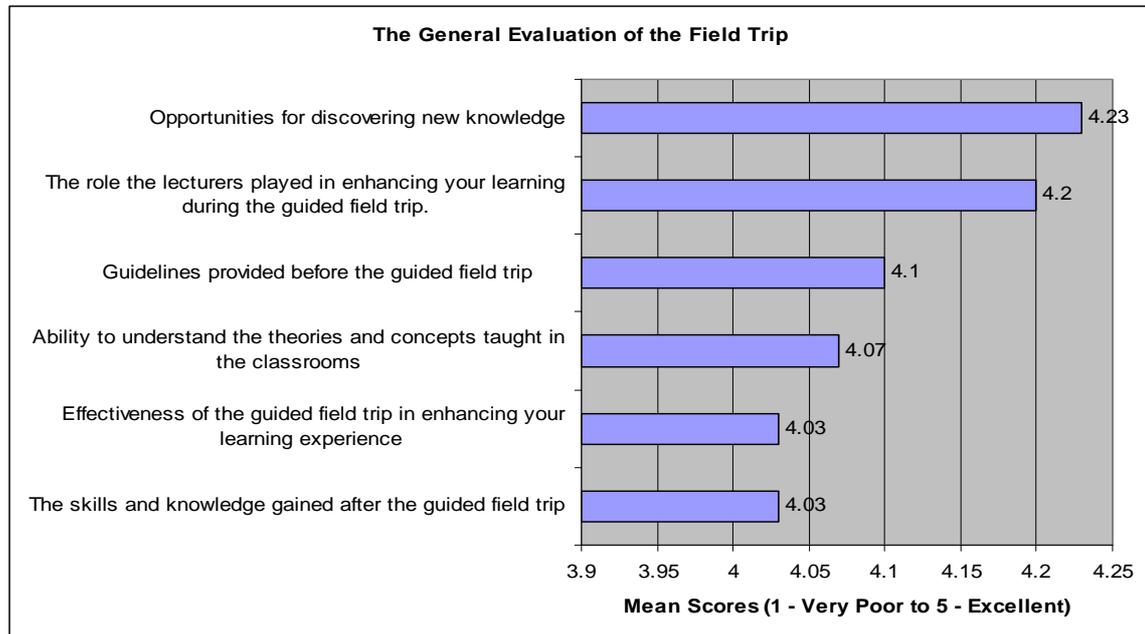
Reliability Analysis

There were a total of 9 items for the Field Trip Organisation construct that was found to be reliable, with a Cronbach Alpha valued at 0.7787. Similarly, for the Lecturers' Attributes, there were also 9 items that were reliable, with a Cronbach Alpha valued at 0.8788. All 13 items for the Students' Learning Experience was found to be reliable with a Cronbach Alpha valued at 0.8394 while there were 8 reliable items for the Skills Attained with a Cronbach Alpha valued at 0.8453 as shown in Table 3.

Table 3: *Values of Cronbach Alpha for Field Trip Organisation, Lecturers' Attributes, Students' Learning Experience and Skills Attained*

Constructs	No. Of Variables	Value of Cronbach Alpha
Field Trip Organisation	9	0.7787
Lecturers' Attributes	9	0.8788
Students' Learning Experience	13	0.8394
Skills Attained by Students	8	0.8453

The Influence of the Organisation of the Guided Field Trip on Students' Learning Experience and Skills Attained

As shown in Table 4, the Pearson Correlation analysis shows that the Organisation of the Guided Field Trip and its three (3) dimensions (Questionnaires/Guidelines, Overall Coordination and Pre-Trip Preparation) had a direct influence (positive association) on Students' Learning Experience and Skills Attained. Of the 3 dimensions, the Questionnaires/Guidelines influenced the Students' Learning Experience and Skills Attained the most, followed by Overall Coordination and Pre-Trip Preparation.

Table 4: *Correlation between "Field Trip Organisation" and "Students' Learning Experience and Skills Attained"*

	Learning Experience (SLE) (r-value)	p-value	r^2	Skills Attained/ Enhanced (SSA) (r-value)	p-value	r^2
Organisation of the Guided Field Trip (OGFT)	0.585	0.000	0.342	0.699	0.000	0.489
Dimensions						
Questionnaire/Guidelines (QG)	0.576	0.000	0.332	0.558	0.000	0.312
Overall Coordination and Organisation (OC)	0.350	0.006	0.122	0.525	0.000	0.275
Pre-Trip Preparation (PTP)	0.343	0.007	0.118	0.462	0.000	0.213

A Multiple linear regression (MLR) analysis was conducted to investigate the influence of the Questionnaires/Guidelines, the Overall Coordination and the Pre-Trip Preparation on Students' Learning Experience and Skills Attained respectively. Table 5 shows that the MLR model with the 3 predictors of the Organisation of the Guided Field Trip (Questionnaires/Guidelines, the Overall Coordination and the Pre-Trip Preparation) have worked well in explaining the variation in Students' Learning Experience (F = 11.203; df = 3, 57; p = 0.000). It can be seen that the Questionnaires/Guidelines was found to exert a significantly positive influence on Students' Learning Experience (t = 3.936, p = 0.0000, b = +0.371) whereas both the Overall Coordination (t = 1.089, p = .281, b = +.086) and the Pre-Trip Preparation (t = 1.446, p = .154, b = +.086) were found to be not significant.

Table 5: *MLR Results for Questionnaires, Overall Coordination and Pre-Trip Preparation as Predictors of Students' Learning Experience*

Dimensions	B	Std. Error	Beta	t	Sig.
(Constant)	**1.784**	**.382**		**4.673**	**.000**
Questionnaire/Guidelines (QG)	**.371**	**.094**	**.471**	**3.936**	**.000**
Organisation/Coordination (OC)	.086	.079	.126	1.089	.281
Pre-Trip Preparation (PTP)	.086	.060	.162	1.446	.154
R-Square: 0.371	F-Ratio: 11.203				Sig F: 0.000

a Dependent Variable: Students' Learning Experience (SLE)

Table 6, on the other hand, shows that the overall MLR model with the 3 predictors of the Organisation of the Guided Field Trip has worked well in explaining the variation in Skills Attained (F = 18.266; df = 3, 57; p = 0.000). All 3 predictors, that is, Questionnaires/Guidelines (t = 3.041, p = 0.004, b = +0.336), Overall Coordination (t = 3.215, p = 0.002, b = +0.297) and Pre-Trip Preparation (t = 2.840, p = 0.006, b = +0.198) were found to exert a significantly positive influence on Skills Attained.

Table 6: *MLR Results for Questionnaires, Overall Coordination and Pre-Trip Preparation as Predictors of Skills Attained*

Dimensions	B	Std. Error	Beta	t	Sig.
(Constant)	.301	.447		.673	.504
Questionnaire/Guidelines (QG)	**.336**	**.110**	**.328**	**3.041**	**.004**
Organisation/Coordination (OC)	**.297**	**.092**	**.334**	**3.215**	**.002**
Pre-Trip Preparation (PTP)	**.198**	**.070**	**.286**	**2.840**	**.006**
R-Square: 0.490		F-Ratio: 18.266			Sig F: 0.000

a Dependent Variable: Skills Attained

The Influence of Lecturers' Attributes on Students' Learning Experience and the Skills Attained in a Guided Field Trip

As shown in Table 7, the Pearson Correlation analysis indicates that the Lecturers' Attributes and its two (2) dimensions (Support Attributes and Core Attributes) have a direct influence (positively associated) on Students' Learning Experience and Skills Attained. Of the 2 dimensions, the Core Attributes has a bigger influence on both the Students' Learning Experience as well as the Skills Attained.

Table 7: *Correlation between Lecturers' Attributes and Students' Learning Experience and Skills Attained*

Constructs	Learning Experience (SLE) (r-value)	p-value	r^2	Skills Attained/Enhanced (SSA) (r-value)	p-value	r^2
Lecturers' Attributes (LA)	0.488	0.000	0.238	0.450	0.000	0203
Dimensions						
Support Attributes (SA)	0.350	0.006	0.123	0.371	0.003	0.137
Core Attributes (CA)	0.557	0.000	0.310	0.447	0.000	0.200

Based on the results in Table 8, the overall MLR model with the 2 predictors of the Lecturers' Attributes construct (Support and Core Attributes) have worked well in explaining the variation in Students' Learning Experience ($F = 13.092$; df = 2, 58; p = 0.000). Only the Core Attributes predictor was found to exert a significantly positive influence on the Students' Learning Experience ($t = 3.980$, p = 0.000, b = +0.404 whereas the Support Attributes predictor was found to be not significant ($t = 0.254$, p = 0.800, b = +0.023).

Table 8: *MLR Results for Support Attributes and Core Attributes as Predictors of Students' Learning Experience*

Dimensions	B	Std. Error	Beta	t	Sig.
(Constant)	**2.231**	**.353**		**6.317**	**.000**
Support Attributes (SA)	.023	.091	.034	.254	.800
Core Attributes (CA)	**.404**	**.102**	**.537**	**3.980**	**.000**
R-Square: 0.311		F-Ratio: 13.092			Sig F: 0.000

a Dependent Variable: Students' Learning Experience (SLE)

Table 9, on the other hand, shows that the overall MLR model with the 2 predictors of the Lecturers' Attributes construct has worked well in explaining the variation in the Skills Attained (F = 8.068; df = 2, 58; p = 0.001). Once again, only the Core Attributes predictor was found to exert a significantly positive influence on the Skills Attained at a 95% Confidence Level (t = 2.441, p = 0.018, b = +0.344) whereas the Support Attributes predictor was found to be not significant (t = 1.140, p = 0.259, b = +0.144).

Table 9: *MLR Results for Support Attributes and Core Attributes as Predictors of Skills Attained*

Dimensions	B	Std. Error	Beta	t	Sig.
(Constant)	**1.587**	**.490**		**3.240**	**.002**
Support Attributes (SA)	.144	.126	.164	1.140	.259
Core Attributes (CA)	**.344**	**.141**	**.351**	**2.441**	**.018**
R-Square: 0.218		F-Ratio: 8.068			Sig F: 0.001

a Dependent Variable: Skills Attained (SSA)

DISCUSSION AND IMPLICATIONS

The findings of the study accentuate what has been in the vast literature on field trips, that is, an effectively organised field trip and the role played by its facilitators are vital in ensuring its success. The findings show that both the organisation of the guided field trip and the lecturers' (facilitators') attributes are significantly and positively associated with the students' learning experience as well as the skills they attain as a result of the field trip. In terms of organisation, the most important predictor influencing the students' learning experience and skills attained are the set of questionnaires and guidelines that was provided to them. This only reflects the importance of setting the learning goals and objectives at an early stage of the planning process and following through with the aid of questionnaires and guidelines so that students are well aware of what they are expected to derive during and after the guided field trip. It was also discovered that the overall coordination and pre-trip preparation of the field trip had a significantly positive influence on the skills attained by the students. The results of this study imply that more skills are attained or enhanced during the "pre-trip stage" of a field trip whereas the students' overall learning experience (which was significantly influenced by the questionnaires and guidelines) is far more enhanced "during the trip" and "after the trip", where the learning goals are matched with their learning experience.

The findings also indicate that the lecturers' core attributes played a significantly positive role in influencing both the students' learning experience and the skills attained. These core attributes included their knowledge ability, commitment, dedication, their well-preparedness, enthusiasm and the close rapport they developed with the students as a result of the field trip exercise.

The long-term implication of this study is that institutions of higher learning in general and business schools in specific would need to enhance their policies and practices to ensure that guided field trips become an integral part of the curriculum. This would certainly benefit the students who would be able to make sense of the somewhat abstract business concepts and theories they learn in the classroom by relating these to what they experience hands-on in the field sites that they visit thus leading to higher levels of cognitive and affective learning.

CONCLUSION

The study does have some limitations, especially with respect to the sample size which is quite restricted. The questionnaire developed for this study has room for further improvement. Despite this, the actual findings certainly provide an insight into the students' perception of the key factors that they considered influenced their learning experience and the skills they attained as a result of the guided field trip. A field trip that is carefully planned, organised and fully engaging the students, can become a highly effective teaching and learning mechanism that will enhance the students' learning process culminating in a sustainable and lifelong learning experience. Students learn best when they are directly involved and responsible for their own learning. As a wise Chinese proverb puts it "Tell me, I'll forget. Show me, I may remember. But involve me and I'll understand".

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INTERLANGUAGE ANALYSIS OF THE STUDENTS IN ESP CLASS
(A Case Study at STIE Perbanas Surabaya)

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ABSTRACT

Second Language Acquisition (SLA), for Indonesian to learn English, is quite interesting to be researched. The students of English for Specific Purposes (ESP) class are mostly adults in the college of economics. Since English and Indonesian are very distinct languages both grammatically and phonologically, it is really a hard job for Indonesian students to acquire English. Therefore, looking at the errors of their English and the motivation to learn this language is important. This paper is a case study done at STIE Perbanas Surabaya using 21 students of ESP class as the respondents. It attempts to investigate the students' unique 'interlanguage' by means of analyzing their errors in their composition. It is assumed that their first language (L1) influences their English language (L2). Besides that, it also tries to investigate their attitude toward English and motivation by means of questionnaires. Implication for suggestion is also discussed.

Keywords: ESP, SLA, interlanguage, L1, L2.

INTRODUCTION

Interlanguage as it is defined by Richard (1993) is the type of language produced by second and foreign language learners who are in the process of learning a language. In language learning, learners' errors are caused by several different processes and this is due to some such as the mother tongue (L1), overgeneralization, the meaning and grammars that are already known. This interlanguage is unique depending on the learners' background of knowledge of the language they have previously learned or acquired. Indonesia students are supposed to have acquired Indonesian language as their mother tongue; therefore, such mother tongue (L1) will inevitably influences their interlanguage in learning foreign language such as English. To see what their interlanguage look like is by assuming that the L1 and English (L2) are different. The differences are the factors influencing their L2. Motivation in learning English as the L2 is also important to be investigated in order that their interlanguage in the process of learning can be improved. The college where the students are learning with the facilities can be of other factors influencing their English interlangauge.

Learning English by the students of non English department seems to be different from that by the students of English department. First of all, the students of non English department—when they firstly enter their college— merely want to learn the discipline of science the college offers to them. Therefore, the students of economics also have intention to learn the science of economics in their college. Thus, when considering their motivation or their entry behavior, it is obvious that they don't have motivation to learn English. Secondly— when looking at the curriculum— English subject is considered less emphasized in terms of the hours or time allocated for learning English. Thirdly, most of the students are grown up or adult learners, so that they might have their own characteristics in the way of learning

English. In general, in Indonesia, when considering the references dealing with English subject in the library it tends to be paid less attention by the college. Therefore, when they want to find resources dealing with English subject for learning outside the class sessions, they find it difficult.

STIE Perbanas Surabaya (a College of Business and Banking) has a curriculum in which English is also offered to the students as compulsory subject. English in this college is provided for the students in the first semester (English for economics) and in the second semester (English for Specific Purposes/ESP related to the department such as accounting and management). English I is considered "a package", in which all the new students when registering their names in the first semester, they have to take it. English I comprise the materials concerning English for economics in General. Unlike English I, English II can be taken either directly in the second semester or further semesters during their study period. English II (ESP) is English for Management and English for Accounting. Thus, in the first semester, both the students of Management and those of Accounting take the same English category, English for Economics. In the second semester, the students of management are separated from the students of Accounting. The former take English for Management while the latter take English for Accounting.

As described above, not all of the students directly take English II in the second semester. Some take directly, while others postpone taking this subject even in the last semester. This can create problems especially when the teacher manages the class activities due to their different background of present knowledge. Thus, when the teacher tries to teach English in the first session, he/she finds it difficult. Due to the characteristics of the students above, learning English for ESP students is really unique. Therefore, the writer is curious to know whether in the process of learning, they have specific interlanguage of English. In other words, the writer is interested in conducting a research concerning the interlanguage made by the students of economics. Another reason is that, so far, there has not been any research dealing with interlanguage of English conducted in this college.

The students of economics have their own characteristics in the process of learning English in the classroom. *For one thing*, they don't have motivation to study English in their college due to their intention the first time they enter the college. *Another thing* is that, they are adult so that they have their uniqueness in learning English. In addition, the environment and resources are different from the students learning English in English department. *Last of all* there has no research related to second language acquisition in the college of economics, especially at STIE Perbanas Surabaya. Unfortunately, English subject is considered compulsory so that they are obliged to take this subject regardless of their present knowledge of English. It is assumed that they have produced their English, which— to some extent— appears to be their interlanguage of English. This paper attempts to describe (1) the pattern of interlanguage produced by the students of economics (2) the characteristics of interlangauge produced by the students of economics, and (3) the students' background of knowledge and motivation in learning English. By revealing the patterns above it is expected that this paper can benefit to the teacher of English so that any action can be taken. Beside that, this study can also give some possible information to the college so that the leaders or the policy makers can make decision for supporting the teacher of English to manage the class with facilities related to the learners' English proficiency. Last of all, this research is expected to induce other researchers to do the same research in the same topics but in different places of non English colleges.

REVIEW OF RELATED LITERATURE
Second Language Acquisition

The field of second language acquisition (SLA) has long sought relevant factors to explain differential attainment for early and late learners. This phenomenon was identified by the emergence of the ideas behind Lenneber's Biological Foundations of Language since 1967 (Moyer, 2004). Therefore, the idea of a critical period for language learning has guided a great deal of the research on second language acquisition. It is stated that though Leneberg himself made little specific mention of SLA, his critical period hypothesis has evolved into a full blown theory for the field, often assumed to be a unitary account of non-native like outcome (Birdsong, 1999 as in Moyer, 2004). However, so far many research studies have been produced and the results are in some cases showing similarities, but on the other cases, showing some variances. This is due, to some extend, the sites of the research where the researches have been done.

From great efforts in SLA researches, it can be seen what is actually studied in SLA. Gass and Selinker (1994), states that SLA is the study of how second languages are learned. Furthermore, it is the study of how learners create a new language system with only limited exposure to second language. Thus, the study in ESP classes like in STIE Perbanas Surabaya (A College of Economics) seems to be one of the examples those learners learning a second language with little exposure. In further details, Vivian Cook (1994) states that, when relating SLA to linguistics, it is the same as looking at the nature of both SLA research and linguistics. In connection with the relationship, Chomsky as in Cook (1994) defined three basic questions. First of all, what constitutes knowledge of language? Second, how is knowledge of language acquired? The third, how is knowledge of language *Put to Use*.

The first question deals with the prime goal of linguistics that is to describe the language contents of the human mind. It also describes the task which represents what native speakers know about language—their linguistic competence. The second question is related to the second goal of linguistics in discovering how knowledge of language comes into being—how linguistic competence is acquired by the human mind. The third question describes that language knowledge can be used in many ways—for communicating, for planning, for worship, for declaring etc. In other words, discovering how knowledge of language is used means seeing how it relates to thinking, comprehension, and communication. Thus, by looking at the three questions, it is obvious that the goal of SLA research covers three areas mentioned above.

In connection with the goal in SLA research studies, any research, not to mention the SLA research in ESP classes, has to fulfill any of the efforts in SLA research mentioned above: what constitutes knowledge of language by the students of ESP classes?; how is knowledge of language acquired the students in ESP?; how is knowledge of language *Put to Use* by the students in ESP classes. Since the ESP classes involve the students with Indonesian native speakers, second language acquisition in this pattern covers the knowledge of first language (L1) that is Indonesian language. Thus, this first language might be also in part reflected in the second language acquisition. Besides that, their attitude toward L2 can be of good information for the teachers in the teaching and learning program.

The Role of L1

Krashen (1981), states that elements of language or language rules are acquired in a predictable order. According to him, the order is the same regardless of whether or not instruction is involved. In addition, the natural order is determined by a synthesis of the results of the morpheme order and is a result of the acquired system, without interference

from the learned system. Other proponents, Dulay and Burt as in Gass (1994), conducted a research study on language acquisition of English morphemes by adults. Based on their study, the result showed that there was justification in positioning a "natural order" of English morphemes acquisition. They also said that there was some evidence of the role of the Native Language (L1). Similarly, the same study on Japanese learners learning English, was also done by Hakuta (1974) as in Gass (1994), it was found that there was an influence by the L1, though the result of the acquisition order was quite different from that by Dulay and Burt.

More specifically, White (1986) conducted a study to test whether L1 parameter setting influence L2 learning and whether all aspects of parameter hang together in L2 learning, found out that Spanish and Italian learners—who wrongly accepted more null subject sentences— made more mistakes compared to the French speakers whose language has no differences for subject-verb inversion (Cook1994:157-199). Gass and Selinker (1994) had investigated the interlanguage of non native speakers: Chinese and Spanish. The results show that their English errors are due to their L1. Most of them have almost the same patterns of errors ordered from the most to the least is as the following. *The third singular person (s), Possessive ('s), Plural (-s), Past Irregular Verbs, Contractible Auxiliary, Plural (-es), Contractible Copula ('s;'m,'re), Progressive (-ng form), Articles (a, the),* and *pronoun case*.

Indonesian and English are also different in such *grammatical categories, especially, passive construction, articles, tenses (simple present and past tenses)*. Thus, the pattern of the Indonesian students' English *errors might be also due to such differences. In Indonesian language, passive construction, articles*, and *the past* and *present tense* related to the verb changing in the form (both *-ed* and *irregular* forms of verbs) will have significant influence towards the Indonesians' English errors.

The Role of Motivation in L2 Learning.

Unlike Dulay and Burt (1994), Hakuta (1974), White (1986), who studied on the influence of L1 toward L2 learning, Crookes and Schumidt (1991), Dornyei (1994a) Gardner and Trembly (1994) as quoted by Moyer (2004) conducted the studies on the influence of motivation toward the L2 learning. Motivation, which is referred to sociocultural types in the target language, has influence toward L2 learning. They stated that the strength of motivation has been shown to correlate L2 learning (Moyer, 2004:39-40).

The importance of motivation in L2 learning is crucial. Gass and Selinker (1994) state, those individuals who are motivated will learn another language faster and to a greater degree. Based on numerous studies, there is always evidence that indicates the motivation as predictor for language-learning success. According to them, motivation is considered to be one of the second strongest predictors of success, though they noted that the results of studies were based on the various definition of motivation. Motivation, as defined, refers to four aspects: a goal, effortful behavior, a desire to attain the goal, and *favorable attitudes* toward the activity (Gardner, 1985 as in Gass and Selinker, 1994). According to McDonough (1984), the *favorable attitudes* are conditioned by the learners' environment surrounding them.

Based on the description above, it is obvious that L1 has influence toward L2 learning and so does motivation. In SLA, any process of teaching and learning should pay attention to these two factors. Therefore, it is also salient for the teachers of second language to take them into account when teaching in the classroom.

RESEARCH METHODOLOGY

Respondents

The respondents of the research were the students of economics, especially those who were studying in Management department. They were taking English II (English for Management) the researcher was teaching while the research was being conducted. The class consists of 21 students and they are in their various semesters. Some were in their third semester, others were in the fifth, seventh, and even ninth semester. Some were already to take this English II and some were retaking or repeaters.

Data Collection

The data were collected from 21 students in ESP class by asking them to write a composition. They were requested to write a paragraph with the topic of "Why I study Management Science?" First of all, the teacher gave some topics for discussion in every session started from the fist week. The topics are related to management and business. In Every session, from week 1 to week 6, they had been taught English concerning the arguments and reasoning. Thus, reasoning or arguing skills had been introduced to them during six week or six sessions. They had practiced arguing and reasoning. They debated individually and in group of four or five. After the sixth week, the students were given a test of writing a composition of a paragraph. This took about 30 minutes. Besides that, the students were given a questionnaire concerning their attitude toward English, and this is referred to attitude or motivation in learning English. This is intended to see whether they have motivation both inside and outside the class. It is described using percentage in which the questionnaire type is adopted from Mc Donough's (1984).

Data Analysis

First of all, the students' work as the result of the writing test were collected and classified into the types of errors. In this case, it is collected based on the sentences, which contain grammatical errors. In collecting and analyzing the data, the research follows the research done by Gass and Selinker (1994:16-52), especially based on a composition (Gass and Selinker used both composition and conversation). In this study, only written composition is investigated. From the composition, the errors were identified and tallied in a rough table, in the sense that all errors were put into group such as *passive voice*, *agreement*, *copula* etc, depending on the errors the students made. After this, they were graded based on the 'difficulty', that is the *rank or the frequency of the highest to the lowest number of errors*. From this frequency, the analysis of the data was done. Thus, the order of the most errors to the least ones can be arranged, showing their interlanguage as well as the rank of difficulty they find in learning English as a second language. Furthermore, when dealing with attitude or motivation, the questionnaires were tabulated and given the score of each point of the statement such as (1) strongly disagree, (2) disagree, (3) uncertain, (4) agree, and (5) strongly agree. From this, the description uses the percentage. Thus, only the scales above 3 (4 and 5) are taken to show that some factors related to motivation are good for learning English. On the other and, the scales below 3 are considered to be the factors of motivation that should be paid attention by the teachers or the college.

RESULTS AND DISCUSSION
The Students' Composition

Considering the students 'work of composition, there seems various errors made by the students and depending on the length of the composition they made. Some wrote only one paragraph others more than one paragraph. This is because the test was free for them. The instructor just gave them a question "**Why do I study management**?" It can be classified into nine groups as shown in the following table.

Table.4.1 Errors Made by the Students

NO	Passive 4	Agree Ment	Cop. Be	Pres simp tense	Ing Form	Simp past tense	Mod al	Inf. with out to	Th e/a
01 .	Xx						X		Xx
02 1		X	X						
03 .				X	X				X
04	X	Xx							X
05						X			X
06		X					X		
07	Xxxx		X						X
08		X							
09	X							x	
10		X							X
11	X	Xx							
12			X						X
13	Xxxx		X		X		X		
14	X				X				
15	X								Xx
16								x	
17		Xxxxxx					X		
18					X		X		
19	Xxxx	X					X		
20	Xxx				xx		X		X
21		X							
	22	16	4	1	6	1	7	2	11

As seen in the table above, the errors made by the students vary from one student to another.

Passive Voice Construction is ten times made by the student no. 2 ,4 ,7 ,9 ,11 ,13 ,14 ,15 ,19, 20 with the total number of 22 errors. *Agreement* is made by Students no. 2, 4, 6, 8, 10, 11, 17, 19, and 21 with the total number of 16 errors. *Copula Be* is made by the students no. 2,7,12,13, with the total number of 4 errors. *Present Simple Tense* is made by student no. 3, and *Past simple tense* is made by student no. 5, with the total number is only one for each. *Ing form* is made by students number 3, 13,14,18,20, with the total number of 6 errors. *Modal* is made by the student no. 1, 6, 13, 17, 18, 19, and 20, with the total number of 7 errors, *Infinitive without to* is made by the student no. 9, 16, with the total number of 2 errors. *Article The/a* is made by student no. 1,3 ,4 ,5 ,7 ,10 ,12 ,15 , 20 , with the total number of 11 errors.

Thus, when they are put into order based on the frequency as done by Hakuta (as in Gass, 1994) and Cook (1994:157-199), from the most frequent to the least frequent it can be shown in the following table:

Table. 4.2 Order of Errors Made by the Students
Based on the Frequency

1	2	3	4	5	6	7	8	9
Pas sive	Agree ment	The / a	Mo dal	Ing Form	Cop Be	Inf Witho ut To	Simpl e Past Tense	Simpl e Prese nt Tense
22	16	11	7	6	4	2	1	1

Based on Table 4.2, the order can be clearly seen. The most frequent errors made by the students is *Passive Voice* (22), followed by *Agreement* (16), *Article The/a* (11) *Modal* Auxiliary (7), Ing Form (6), Copula Be (4), Infinitive Without To (2), and the least frequent ones: *Simple Past Tense* (1) and *Simple Present Tense* (1).

The examples of each construction are as the following:

1. Passive Voice: ***Management required by** the companies.
    *How organization **can be develop**.
    * **It can used** for good investment
    *Twenty percent **will be save**

This construction seems to be the most difficult by the students. *Passive Construction* in the science of economics, especially management has high frequency. Most of the texts in economics and management are dominated by passive construction. Therefore, the students tend to write using this construction. Unfortunately, they have difficulty in writing their composition when they are encountered with the idea to be written in passive sentences.

Considering whether it is influenced by their L1 (Indonesian), it can be compared to their L1 *passive construction*. In Indonesian, *passive voice* is identified by the prefix **–di** for all verbs such as, *guna-menggunakan= digunakan, kembang-mengembangkan= dikembangkan, simpan-menyinmpan=disimpan*. So, when they think in Indonesian they will never have *Verb of the third form*, and there is no **To Be** (be, is, are, was, were, and been). Thus, *passive construction* for the students is really hard to acquire.

2. *Agreement*: *Management have four basic **function**
    *…..because **it have** an important role…
    *dealing with **finance that occur**…

Errors of agreement come to the second made by the students. Again, when the sentences are more complex, the students feel difficult to relate the subjects to the verbs. Thus, the students tend to use the verbs without **–s**, when the subject is in fact singular (the researcher in this case categorizes this error into *agreement*, although it can be identified as *the use* of *the third singular person* **–s.**

3. *Article The/a*: *Management is **art of** securing maximum results…
    ***Organization** has to reach **objectives**
    *I want to work in **company.**

The errors concerning the article **The/a** are made by the students and they are in the third order. In fact, in Indonesian, the article The/a is identified by such as *sebuah, seekor, sehelai, sepotong, suatu*, and so on while the definite articles are usually identified by the word *tersebut*. It seems difficult for the students to use article **the/a** in English.

4. *Modal*:   * I **will to work**
              *I **will to help** my mother's business
              *I **can to improve** my company
              *We **can to do** a good job

Modal in English seems to be the fourth order in learning English. This might not be due to their L1, although Modal cannot be found in Indonesia. Will is usually identified by the word *akan*, and can is identified by *dapat*. Thus, it might be due to the exposure of the *to infinitive* verbs or overgeneralization that all verbs are always in *to infinitive*. Most of the lists of the verbs when they are written in the first forms are always preceded by *to.*

5. *Ing Form* (This includes *Progressive tense*, and *Gerund*):
              *I **am study** management…
              *Management is good **for improve** the company
              *….the theory **for manage** the business
              *..because **of establish** a shop
              *I am interested **in manage** a company

The fifth order is **Ing Form**, mostly dealing with *gerund with preposition*. The students' L1 has no **Ing Form**, therefore, this appears difficult for them to construct in their writing.

6. *Copula Be:*   ***It enjoyable** for me…
              ***Management useful** for me to …
              *It **can important** for me ….
              *We **can discipline and responsible**

Copula Be is difficult, though it is in the sixth order. In the students' L1, Copula be is not there at all.

7. *Infinitive Without To*: *It makes me **to manage** the company
                          *One thing that makes me **to learn** Economics….

Again, the students are used to using to infinitive—verbs preceded by to. However, only two students (no.9 no.16) made the mistakes of this type. Other students never use such patterns in their paragraph, so they didn't make mistakes of this type because they might not "understand" or avoid using the construction of *infinitive without to*.

In their L1, this structure is identified by the word *untuk*. For example, for the sentence" *One thing that makes me **to learn** Economics…," (in Indonesian is possibly, 'Satu hal yang membuat saya **untuk** mempelajari/ belajar Ilmu Ekonomi adalah ….). However, it is not due to the lateral translation of the word *untuk* into *to*. It might be due to their knowledge about *to infinitive* in their L2 from the books they are exposed to but not yet (or just little) introduced to the use of *Infinitive without to.*

8. *Simple Past Tense* (general truth): *When **I study** in High School…
9. *Present Simple Tense* (general truth): *The teacher of management **teach** about…:

The least frequency in making errors is Present Simple Tense and Simple Past Tense. Especially the error "The teacher of management **teach** about…" can be also classified into both *Agreement* and *general statement*. However, they mostly can make sentences in *simple present tense*. This *present simple tense* just needs verbs of the first forms and agreement of –**s, -es** (as in Dulay and Burt, 1973) for the subject of third singular person. Therefore, mostly the errors are categorized *in agreement* (the problem relating the subjects to the verbs).

The Students' Attitude toward English

Attitude is connected to outward behaviors, as well as to internal orientations such as motivation (Gardner et al., (1997). The questionnaire comprises the opinion or perception and scored using scale measure such as, 1) Strongly disagree, 2) Disagree, 3) Uncertain, 4) Agree, and 5) Strongly Agree. After being collected from 21 students, the result is as follows:

Table 4.3 Students' Attitude toward English (Motivation)

No	Statement	Average
01	I don't find any difficulty in studying English	3
02	My English from SMU helps me much to learn English at this campus	3.52
03	The hour of English subject at this campus should be added	3.57
04	I always come on time in every class of English	3.52
05	I always do my assignment given in English class	4.09
06	The situation in the classes is ideal for studying	4.09
07	The number of the students in English class is ideal	4.23
08	English textbooks used in English classes are easy to learn	3.71
09	English teachers at this campus make me study English diligently	3.85
10	English subject at this campus is useful for the development of the science of economics	4.28
11	English studied at this campus is useful for my future	4.23
12	The campus environment supports me to study English	3.76
13	Facilities at the library support me to learn English	1.90
14	Other subjects at this college motivate me to study English	3.47
15	The discipline of science I am studying at this campus motivate me to learn English	3.52
16	Other subject teachers at this campus motivate me to learn English	3.61
17	My friends at this campus motivate me to learn English	3.14
18	The situation at my house/boarding supports me to learn English	2.61
19	The facilities of English at home support me to learn English	2.33
20	The environment of my family or society supports me to learn English	1.66
	Total Average	**3.40**

From the table above, in general the students' attitude toward English is quite good, that is, the average is 3.40. The most prominent things are dealt with item (5), their attitude when doing the assignment, (6) the situation the English classes, (7) ideal English class. They are also aware of the importance of English as shown in items (9) and (10), in which they know that English is useful for both their discipline of science development and their future. However, when looking at the items of 13 (Facilities at the library contribute me to learn English) 18 (The situation at my house/boarding supports me to learn English), 19 (The facilities of English at home support me to learn English) and 20 (The environment of my family or society supports me to learn English), with the average of 1.90, 2.61, 2.33, 1.66 respectively, it seems crucial. In other words, the social background and awareness of English need attention. They don't think that the library is not good for them to learn English. Situation, facilities and environment at home and in the society do not support them to learn English.

CONCLUSION AND RECOMMENDATIONS

 The ESP students seem to be unique for the teachers because of their characteristics. *First*, they come to the college without intention to study English but in fact, English is compulsory subject in the college. *Secondly*, they are lack of references dealing with English subjects in the library. Most of the books, which are available, are about economics, management and accounting. Based on the condition above, the students in learning English (L2) find it hard as indicated in the errors they made in their composition. However, their L1 parameter setting can be of the factor influencing their L2 learning**.** *Passive sentence* in English have different construction compared to that in Indonesian. Besides changing the verbs into the third form (*past participle*), it requires the tenses in English, the *plurals* construction of the subjects and objects, that is –s,-es for inserting appropriate *Be* after the subject of *passive* sentences in English. So, it is similar to the result of the research by Dulay and Burt (1973), Krashen, Sterlazza, Fieldman, and Fathman (1976) on grammatical morphemes showing that the *third person –s, irregular past*, come later in the acquisition (more difficult ones) compared to *Ing Form* , *Copula* and *Auxiliary Be*. In fact, these elements are important in *passive construction* and *Agreement*. Another error is the article *The/a,* which is also similar to the research by Dulay and Burt (1973), and Krashen et all. (1976**) are acquired after** *Auxiliary Be***,** *Ing Form***.** To the students in this research**,** *The/a* seems to be difficult, therefore, when they attempt to write sentences containing sentences that require *The/a,* they tend to make errors.

In general, the results are similar to the previous studies. What makes it different is that, the previous studies were emphasized on the grammatical morphemes while this research on the wider-scale: *sentences*. However, the errors in the sentences they made are constructed using such elements: *Past participles, Plurals –s, -es*, *The/a, Ing Form, Copula Be*. Another thing deals with the finding related to *Present Simple Tense* and *Past Simple Tense*. In addition, these constructions also require the knowledge of the elements above. It can be assumed that the errors are induced in part by their L1 for it is different from their L2 in terms of the elements of the errors.

Suggestion for the next action in the class is that teachers should emphasize on the root causes of the errors mentioned above. Introducing *past participles*, *plurals* and *agreemen*t, *articles*, *ing form*, *copula* be through practice is of the paramount action done by the teacher.   Besides that, comparing their L1 and L2 is also good, especially concerning the *plurals, agreement*, and *past participle verbs*. The motivation and attitude toward English, in general (that is of 3.40), is quite good. However, *facilities* at the library should be paid attention. Their social background (*the situation at my house/boarding*, the *facilities of English at home*, and *the environment of their family or society)* should be paid attention, too. This can be solved by

arousing their motivation through class activities. Self Access Center (SAC) will be good for them.

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SUB-THEME:

V. HIGHER EDUCATION MANAGEMENT PRACTICES TOWARDS SUFFICIENCY AND SUSTAINABILITY

HIGHER EDUCATION THROUGH THE SUFFICIENCY AND SUSTAINABILITY LENS

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ABSTRACT

There is a belief in the community as evidenced by researches that Higher Education in the pursuit of rapid commercialization and internationalization is done at the expense of quality that has sustained rapid deterioration. In the highly competitive business of education, the key question is a balance of the economics and sustainability while maintaining quality. This paper proposes a "sufficient and sustainable" model aimed at the core of HE success. In sufficiency, the key philosophy is a middle path that is moderating, reasonable and self-resilient that is based on knowledge and virtuous conditions. Sufficiency must be sustained through the institution and individual capacity and capability. It calls for the institutional transformation of learning aimed at the teaching of the transformation of the students. To create education value, 2 main sets of capacity is needed: the individual capacity which is the nuts and bolts of skills, knowledge, experience and personality and the non-individual capacity in the context of values, beliefs and ideals that influence the mind set. At the institutional level, institutional strengthening, procedural improvements and management and the 3 P's of capacity, product, performance and permanence are the imperatives of the capacity. In the capability aspects, the competency profiles of the teaching and learning must be defined as this forms the crux of quality that reflects real learning and transformation. The sufficiency and sustainability must also be viewed through the economics lens for long term sustainability based on quality.

Key words: sufficiency and sustainability in higher education, capacity and capability

INTRODUCTION

In the 1st round external audit from 2000 – 2005 by ONESQA (Office of National Education Standards and Quality Assessment), it was astounding and shocking to learn that 63.8 % of the 30,010 schools did not meet the standards of the external audit. Billions of bahts had been poured into the educational system. Would the 2nd round external audit from 2006 – 2011 findings be a resounding replication of the previous audit, an incremental or a substantial improvement? What went wrong and what had been done to improve on its educational ideals?

To address these simple questions, let us go back to the fundamentals of education, and its literature (Srikanthan and Dalrymple, 2002; Tierney, 1998 and 1999; Bowden and Marton, 1998; Haworth and Conrad, 1997, and Harvey and Knight, 1996) all of which identified 2 main focal points of philosophies and approaches to student learning and methods of stimulating student learning. These foci belie "transformation" as a key theme that underlies the institution commitment to life-long learning, critical reflections and continuous changes. This was characterized by Haworth and Conrad's (1997), 17 attributes of program quality under 5 main headings of: participants, cultures, interactions, program and resources.

The major function of education is "to increase the individual's capacity to learn, to provide them with a framework with which to analyze problems and their capacity to deal with new information" (Bowden and Marton, 1998). The goal of the university is to support "deepening or transformation". Superficial approaches are equated to educational environmental pollution

(Haworth and Conrad, 1997). Student learning is the ultimate measure of educational achievements, viability and sustainability. But there is a great concern that this had been superficially provided and that the real "transforming" is yet to be realized leading to deterioration of educational quality (Haworth and Conrad, 1997 and Bowden and Marton, 1998) due to over-commercialization and internalization to achieve the "economic" needs rather than meeting the public needs and concerns.

Based on this scenario, this paper advocates that an academic institution needs to fully review and reposition its educational offers based on the "sufficiency" principles and be able to sustain its sufficiency based on its "strategic individual and institutional capacity and capability" but within a viable economic model. This is aimed at filling in the gap of "how to" as a lot of literature had emphasized on what to do, and this paper contends that sustainability is an internal activity that is human based. This human-based internal activity underscores both the "middle-path" approach that had been "lost" in the pursuit of materialistic gains and the "internalized capability and capacity" that had been downplayed or ignored as the tendency to face or deal with the reality of the competencies is evaded.

Sufficiency Concept: An Ideal

4th December 1997 marked the auspicious day when His Majesty King Bhumibhol Adulyadej graciously delivered a Royal address on the self-sufficient economy to clarify mis-concepts and its applicability to people from all walks of life. Self sufficiency means "having enough to live on and to live for and being satisfied with the situation" and "to refrain from leading a luxurious and extravagant rather than just having enough within proper bounds and reasons – as happiness is derived from one's fair conduct, both of intention and action and not form coincidence or taking advantage of others and avoid committing wrong doings that will destroy one-self or others, eliminate one's inner greed, remain true to one-self, as well as preserve and enhance the good virtues within oneself".

The official Thai definition of the Sufficiency Economy, drawn up in 1999, can be summarized as "an approach to life and conduct applicable to every level from the individual, the family, the community and to the development and management of the nation. As a philosophy that guides the livelihood and behavior of people, it calls for and promotes the middle path or middle way to be observed and practiced. Basically, sufficiency has 3 components of: moderation, reason or wisdom or insight and a built-in resilience of immune systems against shocks which arises from internal and external changes. These 3 components are moderated through 2 conditions of: virtue (the spiritual foundation of honesty, diligence, forbearance, self-awareness, perseverance and tolerance) and knowledge (the knowledge foundation of wisdom, intelligence, insight and attentiveness).

The basic tenets as described above challenges the basic fundamental of education that under pin good governance, transparency, morality and social accountability as opposed to materialistic, amoral and politically motivated approach (www.nationmultimedia.com/2006) that has crept into and undermined the pillars of education. Self-sufficiency is a complement to our existing way of life that forms a strong foundation emphasizing on the "know-how" rather than the "know-who"

Sustainability Concept: An Imperative

Fien (2002) noted that sustainability is "a concept – reconciliation of social justice, ecological integrity and well being of all living systems in the planet; a goal – creating an ecologically and socially just world; and a strategy – how to move towards a sustainable future all based on an individual and collective values (Van Wynsberghe et. al., 2002).

Moore (2005) identified 7 key recommendations for sustaining a HE institution as:

1. infuse sustainability in all decisions as a fundamental priority.
2. promote and practice collaboration through values discussion and time for reflection, promoting collaborative inquiry on options for grading, broader based admission standards, team teaching and peer grading.
3. promote and practice trans-disciplinarity through program flexibility, discipline redesign, epistemology discussions and worldviews.
4. focus on individual and social sustainability through increased job security, community involvement, reduce loads and promote openness.
5. integration of planning, decision making and evaluation through changed evaluative structures, transparency and set criteria and indicators with community for institution evaluation.
6. integration of research, service and teaching through continuing development of lecturers, scholarship, community learning and relationships rethinking outside of the box.
7. create space for pedagogical transformation through creation of space for self-development, improving student-instructor interactions and relationships.

It would be noted that the recommendations above highlighted the strategic institutional competencies affecting sustainability are human and institution based. Strategically, competencies is the combination of resources and capabilities (Hitt, Ireland and Hoskisson (2005), and they become core competencies when they are valuable, rare, difficult to imitate and substitute. Haanes (2000) stated that the competencies are the means by which an institution deploys its tangible and intangible resources that integrate the individual professional skills and knowledge with the institutional competencies which can be the firm's knowledge, culture, functions, processes or routines that Prahalad and Hamel (1990) called core competencies. Mazzarol and Soutar (1999) suggested that competitive advantage stems from the institution's brand identity – quality image and high market profile; coalition formation; forward integration; institutional expertise; institution culture and innovation; and effective use of information technology, all of which is dependent on the human and institutional context. These competencies are the distinctive components of competitive sustainability

Based on this, this paper would like to propose that to sustain the academic institution's competitiveness; it calls for managing the strategic capital assets of the institution that leads to the strategic human and institutional capacity of the institution. At the same time, this must be managed within the context of a sound and sustainable economic model that the institution uses. From the economic viewpoint, being sufficient and being able to sustain these ideals, Yin, *et.al* noted that the education policy needs to include economic viewpoints like:

- Meeting the short-term and/or long term economic demands of society
- Identifying, procuring and allocating appropriate resources for inputs into the education system
- Making appropriate education provisions like school places for students, number of qualified and competent instructors, quality infrastructure
- Changing the internal structures of the education system to meet different purposes in operation and education
- Enhancing the efficiency of internal processes of the system and its sub-systems

The HE Sufficiency and Sustainability model

As the sufficiency concept is a philosophical approach applicable to all walks of life and works, the key is the "moderation" in what we strive to achieve. The "moderation" aspects are enshrined in HM Royal advice to maintain a balance in the five aspects that describes the principle of being self-reliant of the teachers, the learners and the HE institutions (www.chaipat.or.th) as:

1. A balance in the state of mind: one needs to be strong, self-reliant, compassionate and flexible that forms the foundation of a competent and caring human that cut across all the institutional players. Besides, one should possess a good conscience and place public interests on a higher priority, above one's own.
2. A balance in social affairs: people need to help each other, strengthen the community, maintain unity, and develop a learning process that stems from a stable and strong foundation which is the academic institutions that brings together the scholars (teachers and learners within the cathedral of learning).
3. A balance in managing natural resources and the environment: people need to learn how to use the country's resources efficiently and carefully to create sustainable benefits and to develop the nation's stability progressively.
4. A balance in technology: people need to learn to use appropriate technology while encouraging new developments from the users' local wisdom as it is not in having the technologies that advances us, but in the capacity and capabilities in the utilization.
5. A balance in economic affairs: one needs to increase earnings and to reduce expenses of the academic community of the teachers, learners, parents, alumni, governmental units, employment market and parents and pursue a decent life by all the institutional players.

Regardless of the teachers, learners or institutions perspectives, having moderation in what we do and achieve must be based on reasons or wisdom and insight (the source of which is data/information collation, interpretation and integration based on human reasoning power) to guide us in the actions to be taken or decisions to be made. Moderation in the absence of reasons and insights is like a blind man groping in the dark. Moderation in the excess of reasons and insights that does not enlighten is like a blinding light that one does not see the ends and the means.

Figure 1: Sufficiency and Sustainability M...
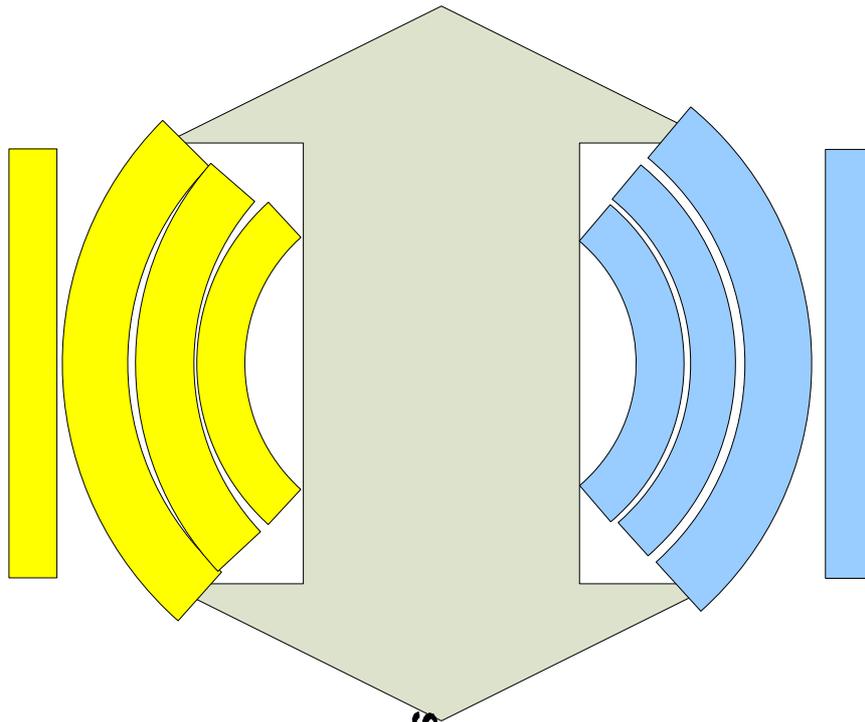
As the world is in a state of continuous and dynamic change, one's system must have a built-in resilience to cope with and withstand the changes. In the HE institutions, the key is the maintaining and sustaining of the interminable omnipotent educational quality. A HE institution can compromise anything but its quality, as once it begins it is the beginning of an end. This marks the beginning of the end as cohorts and cohorts of sub-standard learners marks the beginning of the shoddy and imperfect market force and citizens leading to the deterioration of society that goes against the basic fundamentals of the sufficiency concept that underlies a happy and successful society based on moderation and walking and living the middle way.

Sufficiency does not mean frugality, because if we have excess, then we can move on to a higher level of moderation through continuous development. Sufficiency must be complemented by sustainability. What suffices today might not suffice tomorrow as the world and human life and situations evolve and change. To move on to a higher plane of sufficiency, one must be able to sustain it. In this paper, it is contended that one's sustainability is based on one's efforts. It means managing one's resources wisely through moderation and this depends ultimately on the human faculty.

This means that sustainability from the HE institution's perspectives is based on its strategic capital assets of the human, information and institution. The key is the individual and institution capacity and capability that a lot of institutions had failed to address. It must be noted that resources is useless without the human factor, and the resources is only as good as the human and institution competencies that are intangible. Sustaining sufficiency means maximization of utility through minimal resources based on our capability and capacity through an economic model that does not go into the excesses. Literarily, the HE institutions must produce or transforms students based on this principle. This forms the sustainable part of the sufficiency-sustainability equation in this model as proposed in Figure 1.

The Sufficiency-Sustainability success is intermediate by setting sufficiency as Figure 1 2 conditions of: virtue and knowledge. The virtue conditions emphasized on the "spiritual" values of integrity, honesty, diligence, perseverance, tolerance and self-awareness that forms

the foundation of ethics that underlies the "goodness" rather than "badness" of one's actions and decisions that affects oneself and others positively or negatively. These human's virtues applies equally to the institutions through its governance, its transparencies, its responsibilities and accountabilities to society to develop ethical and virtuous scholars and citizens by ethical and virtuous scholars. The question here is the institution's ideals and commitment based on its virtuous actions to create scholars by scholars.

The second condition of knowledge calls for the human faculty in the identification, interpretation and integration of the information and insights into knowledge and synthesizing them into wisdom. This is the individual capacity and capability that subverts the achievement of "sufficient and sustainable" ideals of the institutional capacity and capability in the creation of knowledge by the individual and institution. These 2 conditions are dealt with within the context of the exiting literature on capacity and capability building in the following sections of the paper.

Strategic Capitals in Higher Education Institutions

Cheng (1995) succinctly highlighted the complexity of the education system as inter-relating sets of technical-economic, human-social, political, cultural and educational functions at individual, institutional, community, social and international levels. The implications for a HE institution is that the success of the "transformation" of the institution lies in creating a strong foundation of the institution embedded in the intangibility of the competency of the human capital, information capital and institution capital (Kaplan and Norton, 1996, 2001 and 2004) as the foundation of institution success from which competitive advantage can be acquired. This would be in support of the professional-artistry paradigm that views education and quality as a practical art rather than a scientific approach leading to indicators as temporary, dynamic, problematic and contextualized rather than absolute and permanent (Fish, 1992). These 3 sets of strategic capital assets noted above are:

     i. ***Human Capital (HC):*** This comprises the knowledge, skills and values of academics and administrative staffs in the creation of education value to the stakeholders.

    ii. ***Information Capital (IC):*** This comprises the IT systems, networks and databases that are horizontally and vertically integrated to support empowerment of the personnel. A key competitive edge is the technology capabilities (Pramongkit and Teay, 2002) of the academic and administrative human sophistication in identifying, interpretation and integration of information into knowledge and market wisdom leading to competent curiosity and competent wisdom (Barabba and Zaltman, 1991).

   iii. ***Institution Capital (OC):*** This comprises the leadership, teamwork, alignment and culture that form the operating core for all the other aspects to function in an integrated total open system.

As these strategic capital assets that are critical to the "transformation of the students" are intangible, Kaplan and Norton (2004) used "strategic readiness" as the proxy for the measure of these capital assets to successfully implement the strategy. In the Human Capital, there is a need to determine the competency profile of the academic and staffs in terms of knowledge, skills and values in terms of its strategic readiness to successfully implement strategy. In the Information Capital, the strategic readiness is determined in terms of the gap difference of the existing and needed information requirements and information infrastructure of the database, applications and communication network. For the Institution Capital, the strategic readiness is determined in terms of the gap differences of the existing and needed leadership, culture, teamwork and alignment of the synergies of all the schools and administrative units. The use

of the "strategic readiness" as the proxy of measure for the intangible capital assets in the institution highlights the "capacity and capability" issue that must be managed strategically.

1. Strategic Capacity and Capability of HE Institutions

The strategic intangible capacity and capability of the institution resources are the knowledge, reputation and culture, whereas the intangible human resources are embedded as the capabilities of academic and administrative staffs in the form of knowledge, skills, and motivation and communication abilities affecting job performance. Andriessen (2001) classified these unique bundles of intangible assets or the core competencies into: collective values and norms (client focus, reliability, and quality), processes (leadership and control, communication, management of information technology) and explicit knowledge (patents, manuals, and procedures) and skills and tacit knowledge (know-how, talent and competencies).

Agenda 21's (Chapter 37, UNCED, 1992) and UNDP Briefing paper (1991) defined capacity building as "the human, scientific, technological, institutional, institutional and resource capabilities" that emphasized the creation of an enabling environment with appropriate policy and legal framework; human resources development; strengthening of managerial systems; institutional development of management structure, processes and procedures, and relationships. Basically, capacity building focuses on "a series of actions directed at helping participants in the development process to increase their knowledge, skills and understandings and to develop the attitudes needed to bring about the desired changes" as noted by FAO (www.capacity.org, 2007).

Succinctly, Mentz, (1997) said that the capacity to achieve lies in the institutional capacity (capacity utilization) rather than technical capacity (availability of skills, methods, systems and technology). In operational terms, Cohen (1993b) highlighted "to strengthen targeted human resources (managerial, professional and technical academic and administrative staffs) that can be marshaled and sustained effectively" or "the ability to perform appropriate academic and administrative tasks effectively, efficiently and sustainably" (Hiderbrand and Grindle, 1994). These complemented Berg's (1993) three main capacity building of skill upgrading – both general and job-specific; procedural improvements and institutional strengthening.

2. Institution Capacity and Capability

Institutional level competencies are embedded in the employee-level competencies; the crux is in the capacities of the institution and its individuals to access and utilize the teaching-learning resources and processes effectively to create value. Mentz, (1997) and Turner and Crawford (1994) proposed 2 layers of capacity and competencies needed for the sustainability of the on-going processes to create and deliver on the educational value:

o Individual capacity of the academic and administrative staffs which is the nuts and bolts of capacity building means the skills, knowledge, experience, personality (de Jager and Clarke, 2001) and the ability not only to do something but also over a period of time to build up a reservoir of knowledge, experience and expertise that determines present and on-going performance. This underlies the "motive, trait, and skill, aspect of one's self-image or social role, or a body of knowledge which he or she uses" (Boyatzis, 1982).

o Non-individual capacity or the institution administrative capacity provides the context (in essence the values, beliefs and ideals) in which individual capacity is developed as they work in the institutional setting which influence their mind-set. This would

mean, in management terminology, the institutional learning of the collective wisdom, expertise and experience of all the individuals working in the institution environment. This institution capacity refers to the size, scope and scale of the performance of the total institution system, the efficiency and rationality (exercise of reason and judgment) of the implementation and sustainability of maintaining the level of output over time. This refers to the internal structures, procedures and policy frameworks and collective capabilities of the staff and external environmental factors (de Jager and Clarke, 2001) or sets of behavior pattern needed to perform (Woodruffe, 1992).

Institutional knowledge is a mixture of both tacit and explicit knowledge and knowledge management role is to unlock them and leverage them as institution asset. Knowledge Management is essentially the transfer of knowledge to others who need it for carrying out their responsibilities in the institution. This transfer from students to lecturers, staffs to administrators, academics to administrative staffs and vice-versa is a synchronous communication between "speaker" and "listener" whereby the information must be interpreted and integrated into knowledge (Haeckel, 1987) with the rest of the knowledge that he or she possesses (Mahesh and Suresh, 2004) leading to wisdom. Knowledge transfer is about connection (Davenport and Prusak, 1998) and not collection (Dougherty, 1999) and von Krogh *et. al* (1996) referred it to "knowledge connection" that is made up of formal and informal relationships. Amidon (1997) went one step further to describe "knowledge innovation – as the creation, evolution, exchange and applications of new ideas into marketable goods and services"

The institution capacity and capability development aspects would include:

o Skill enhancement – general education, on-the-job-training and professional deepening in crosscutting skills such as business, analysis and interpretation and IT (Berg, 1992). These capabilities enhancement include intelligence, skills, knowledge and mental sets of all academic and administrative staffs (Lounser, 1991). The major function of education is to increase the individual's capacity to learn through a framework of analytical and critical thinking and increase in the capacity to deal with new information (Bowden and Marton, 1998).
o Institution strengthening – covering the process of institutional development or institution building implying an infrastructure mentality (Berg, 1992) that could mean the values and cultural aspects of institution building (Morgan, 1993).
o Procedural improvements and Management – covering general functions changes or systems reforms in the academic and administrative units that are on-going (Berg, 1992 and Morgan, 1993). This work organization includes planning, designing, sequencing and mobilizing resources that affects the institutional knowledge creation and teaching-learning- research environment (Lounser, 1991). The institution mechanisms used include group interactions, knowledge management, institutional learning and change management, culture, experience and skills of the institution (Lee and Bai, 2003). The challenge is rarely neither financial nor institutional alone but is the degree of cultural change required or "less attention to structure, more attention to culture" (Tierney, 1999).

3. Individual Human Capacity and Capability

The International Labor Organization (2004) categorized 3 dominant job activity as: tacit – complex interactions; transactional – routine interactions and transformational – conversion of raw materials which showed that jobs requiring tacit interactions were becoming more important especially in developed countries (41%) and developing countries (26%).

Beardsley, Johnson and Manyika, (2006), suggested that these tacit interactions unique to an institution involved the exchange of information, the making of judgment, and the need to draw from multi-faceted forms of knowledge with co-workers, customers and suppliers central to the economic activity. Managing for effective tacit interactions intra and inter institutions means managing the changes, learning, collaboration, shared values and innovation aspects of the institution.

The academic and administrative capabilities competency clusters needed for successful teaching-learning (Thorton and Byham, 1982) can be categorized as: Intellectual – strategic perspective, analysis and judgment; Interpersonal – persuasiveness, decisiveness; Adaptability – resilience; Results orientation – initiative, business sense. Houtzagers, (1999), identified 5 sets of skills and competencies profile of: Professional knowledge, Customer Orientation, Business Awareness, Leadership and Planning and Organizing. These 5 profiles had 10 entities of: Professional knowledge, Orientation, Relationships, Coaching, Leadership, Communications, Business Awareness, Analysis and decision making, and Planning and organizing that are difficult to be copied in an institution.

The human element of knowledge (Chatzkel, 2002; Davenport and Prusak, 1998; Fowler and Pryke, 2003; Hildreth et.al. 1999) were reflected in Blackler's (1995) description of knowledge as "multifaceted and complex, being both situated and abstract, implicit and explicit, distributed and individual, physical and mental, developing and static, verbal and encoded". This led to the imperatives of tacit knowledge residing in people (Hendriks and Vriens, 1999). Kane et. al., (2006) categorized knowledge into 2 groups of:

- o Individual/Tacit – which are expertise, know-how that are manifested through action, acquired through practice and difficult to transfer based on individual beliefs, values, subjective insights or emotions that are contained in the container (technically the human's head) and is difficult to share especially in a teaching-learning episode that is highly individualized.
- o Public/Explicit – which are the rationalization of information that can be stored, codified and transmitted and can be articulated as facts represented in the form of documents, designs, patents, trademarks, business plans, formal language that are objective and rational and are about the container or embodiment of knowledge (Manesh and Suresh, 2004) which is the institutional memory (Anand et.al, 1998) or systematic memory. They are captured in the institution's manuals, procedures, databases, operational models and systematic rules that are easily shared amongst the academic and administrative units leading to knowledge sharing and transfer across all the stakeholders in the institution community.

CONCLUSION

Even though the sufficiency and sustainability concepts are alien to the capitalistic society, higher education should not be commercialized to the point of compromising its quality. It is not quantity but quality that counts. The HE institutions must not lose track of its very reason for its existence and lose sights of its fundamentals and its responsibility towards society.

As such, the paper addresses this issue by applying the sufficiency concept to managing the HE institutions and sustaining it through its strategic capital assets development and management. As contended, it is the individual and institutional capacity and capability that forms the foundation of competitiveness and success. It is through moderation, through our own wisdom and in-built resilience that helps us succeed as opposed to greed, excesses and futile strife that blinds us to our very existence as scholars to create scholars for societal development and harmony.

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SUSTAINABILITY THROUGH THE SUCCESSFUL DEVELOPMENT OF ALTERNATIVE REVENUE STREAMS

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ABSTRACT

In the past, colleges and universities have been generally dependent upon three sources of revenues: tuition, governmental support, and donations from organizations and individuals. As the world continues to move through an era when technology, knowledge, and resources play an ever larger role, the ability for higher education to take advantage of entrepreneurial ventures to increase the diversification of their sources of revenue makes even greater sense. Using the work of Charles Koch, Carl Schramm, and other authors in the field of business and entrepreneurship, this paper attempts to provide a partial bridge between the gap of established theory in the field of business with the current practice of alternative revenue generation by colleges and universities.

Keywords: entrepreneurship, higher education, non-traditional revenue stream

INTRODUCTION

As in many parts of the world, the financial structure within the American higher education system has felt the pressures of an increasingly competitive market and constrained resources. As Hearn (2003) summarized,

> The primary leadership challenge for college presidents today is to maintain high quality and competitive standing in the face of menacing resource constraints. To meet this challenge, many institutions have begun to adopt more business-like perspectives, particularly by aggressively pursuing alternative revenue streams (iii).

While there is significant variability among U.S. colleges and universities, as a group, they have been financially supported through the three pillars of: tuition and fees; philanthropic support; and governmental provisions. As the last pillar has continued to crack under the strain of other budgetary allocations, many institutions have attempted to diversify their sources of income, and some have been quite successful in this pursuit.

With relatively few exceptions, there was little higher education research conducted concerning the diversification of revenue and creation of new income streams until the late 1990s. However, in the last decade, higher education researchers such as Clark, Kintzer, Ikenberry, and Winston, and more recently, Ruch, Kerr, Johnstone, Davies, Bok, and Hearn, have attempted to fill some of that gap in the literature. This literature has certainly not been limited to Europe and the United States, illustrated with such recent work conducted by Liu (2007).

This paper is meant to provide a small supplement to that existing research. The article will provide information concerning nontraditional revenues mined from the Integrated Postsecondary Education Data System maintained at the U.S. National Center for Educational Statistics. Additionally, this work will provide suggestions for a strategic framework

garnered from a dissemination of the literature and the experiences of selected colleges that have been successful in their nontraditional revenue generation.

Diversifying of Revenues among U.S. Institutions

The Integrated Postsecondary Education Data System (IPEDS) is part of the National Center for Education Statistics, which is part of the United States Department of Education. IPEDS is the point of collection for postsecondary education data from all U.S. institutions receiving governmental support. Primary areas for data collection include institutional characteristics, enrollments, completions, graduation rates, student financial aid, institutional finance, and human resources.

Utilizing this database (located at http://nces.ed.gov/ipeds/), it is possible to mine useful information concerning the diversifying of revenues among institutions in the United States. For example, in 2006, there were approximately 450 universities in the U.S. with more than 5,000 students. Only eight had nontraditional revenues that exceeded their tuition revenues. These included some of the most prestigious and highly-selective institutions in the world. For the entire group, the mean value showed that for every $1USD of tuition revenue, this group had $.38USD of nontraditional revenues. Even with very high tuition charges compared to other institutions, the ability to garner income from technology transfer, brand licensing agreements, and government research contracts illustrates that the pursuit of nontraditional revenue is evident in wealthy institutions, but this pursuit also crosses prestige boundaries.

For example, also in 2006, there were slightly more than 500 colleges and universities granting a baccalaureate degree or higher in the U.S. with less than 1,500 students and less than a value of $100 million USD in the long-term assets of their endowment. When compared to large research institutions, many of these colleges would likely fall within the category of what Astin and Lee (1972) coined, "invisible colleges." This group had a similar mean value for their tuition revenues compared to nontraditional revenues; roughly 40 cents of every $1USD of tuition. However, illustrating that necessity often brings innovation, there were three times more than the number of large universities that had nontraditional revenues exceeding that of their tuition, and a few of these small institutions obtained *5-6 times* their tuition revenues.

Interestingly, there also seems to be some continuity to these revenues. Turnover among the top nontraditional revenue earners among small and large institutions has been very low. If you had a large percentage of nontraditional revenues in 2003 compared to your peers, you were very likely to be in a similar spot in 2006. For example, 68% of the institutions among the top 50 nontraditional revenue earners within the group of small institutions were present in both 2003 and 2006. Among the larger institutions, nine of the top ten remained the same for both years. This suggests that once an institution discovers a successful method of diversifying its revenues, there is likelihood that it is able to maintain the revenues from that venture for at least a period of a few years.

A Process for Success

The chaotic nature of entrepreneurial ventures makes a single map showing the route to success impossible to construct. However, while there may not be a specific map, there are certainly principles that an organization can follow that will increase the chances for success. An absence of strategic thinking often yields increased expenses, a disheartened culture, and at best, success dependent more on luck than controllable skills. Instead, university leaders would be wise to follow some structure of intentionality for discovering and building a set of diversified revenue streams. Taking advantage of existing literature and the author's experience from two case studies of successful institutions in this regard, one strategic

methodology might progress as follows: investigate internal skills; look for unexploited opportunities; discover whether there is a match to institutional mission and culture; and build a successful management system.

Investigate Internal Skills

In higher education, as in other areas, entrepreneurial revenue streams seem to be driven by small groups of people over an extended period of time. Clark (1998) makes the point, "Most important, the administrative backbone fused new managerial values with traditional academic ones…Central faculty involvement became a crucial step in avoiding what the academic staff would otherwise see as hard managerialism, too much top-down command" (p. 137). In speaking of the importance of core groups of entrepreneurially-spirited individuals, Hearn (2003) suggests "In each case, creative thinkers on campus accepted the constraints posed by financial exigencies, considered their institutions' comparative advantages, identified a market niche, structured distinctive responses fitting local needs, and garnered additional revenues as a result" (p. 21).

Management systems also need to be developed and in place to maximize the chances of success for diversifying revenue streams, and are discussed later in this paper. However, identifying the small groups of entrepreneurial individuals is a possible first step in this process. This identification process is not necessarily an easy task, as individuals are not located in the same academic disciplines across institutions (Clark, 1998). One possibility of identification that has shown some limited success is the Adversity Quotient Assessment tool, originated by Stoltz (2000) with further studies by others (Markham and Baron, 2003; Markman, 2004). This standardized test, given to more than 100,000 individuals across a wide spectrum of occupations and disciplines, has been shown to be somewhat correlated to predicting an individual's ability to overcome obstacles, and therefore, their potential for entrepreneurial success. Additionally, reputations and existing 360° assessments that identify those who readily take on new projects and lead them to successful levels would also be helpful in identifying core groups capable of building new revenue streams. Although the potential for experiencing greater levels of conflict and taking longer to establish are possible, recruiting individuals from a variety of backgrounds and representing a diverse skill set is advisable (van Knippenberg, De Dreu, and Homan, 2004).

Look for Unexploited Opportunities

Once this core group of individuals has been identified, institutional leadership should assist the group in developing ideas. One way of doing so is providing the group with a list of benchmarks that have been developed by other institutions. Hearn (2003) summarized the examples of nontraditional revenue-generating activities upon which higher education institutions in the United States have embarked. These activities were:

    Instructional Initiatives
            Test-preparation programs, Retiree-oriented courses, Programming funded by state for workforce training
    Research and Analysis Initiatives
            Technology-transfer offices, Start-up firms, Business partnerships, Business incubators, Research parks, E-commerce sales of institutional expertise, Fee-based information services
    Pricing Initiatives
            Differentiated pricing, Unbundling of user fees for services

Other Financing Initiatives
>   Unitized investment pools, Venture-capital investment, Participation in arbitrage and options markets, Revolving funds, Internal cross-subsidization

Human Resource Initiatives
>   Limits on external consulting by faculty, Compensation incentives for revenue generation, Retirement/rehire incentives for senior faculty

Franchising, Licensing, Sponsorship, and Partnering
>   Arrangements with Third Parties, Tours and camps, Concert series, Sponsorships of on-campus events, Outsourcing contracts with revenue guarantees, Distributed learning partnerships, Logo-bearing merchandise licensing

Initiatives in Auxiliary Enterprises, Facilities, and Real Estate
>   Upgrading athletic facilities, On-campus debit cards, Off-campus extensions of debit cards, Financial services, Facility rentals, Alumni services

Development Office Initiatives
>   Appeals to donors abroad   (p.7)

There may also be other possibilities for alternative revenue generation that are specific to a geographic market or taxable rules unique to various governments, and could be exploited by a university. For example, nonprofit mailing rates in the United States are substantially lower than for private and for-profit enterprises. This has resulted in seminar corporations being bought by colleges to obtain those rates, and thus exploit the difference to take advantage of additional profits. The mission of training and development for the seminar companies was close enough to that of nonprofit colleges and universities as to satisfy governmental taxing authorities. As that industry has consolidated under these universities, the competitive advantage has diminished, but not before millions of dollars has been added to the operating budgets and endowments of those universities savvy enough to make early purchases (Prine, 2004).

Long-term competitive advantage must also be considered as the university further develops considerations for revenue diversification. It makes little sense to make significant investments in personnel, capital, and opportunity costs if the strategic advantage can be easily copied or replaced in the short term by competitors with greater resources.

Discover a Match to Institutional Mission and Culture

As groups try to identify the potential areas for revenue diversification, a piece of that analysis should be spent in determining whether there are synergistic effects between the mission of the institution and the non-traditional revenue stream. One Hawaiian institution discovered the benefits of this effect by starting a Polynesian Cultural Center that has developed into the largest paid tourist attraction in the region, is primarily staffed by students, and is incorporated into many aspects of campus life. While this connection is not an absolute requirement, the ability to avoid an organizational disassociated and even schizophrenic behavior makes this consideration worthwhile (Prine, 2004). Antagonistic revenue streams could also be avoided by working through this matching process.

Concurrently to the development of thought about the match between culture and the new revenue stream, deliberation must also be given to its ethics and legality. "For example, significant ethical and legal concerns surround appropriate use of intellectual property, faculty labor, and institutions' privileged tax status. Realistically, any new revenue-generating activity poses legal issues, as institutions must consider potential liabilities in court" (Hearn, 2003).

Collins (2005) and others have made the argument that organizations are better performers when they are able to focus on doing relatively few activities very well rather than attempting to be all things to all constituencies. Popularized by Collins as the "Hedgehog Concept," he means "attaining piercing clarity about how to produce the best long-term results, and then exercising the relentless discipline to say 'No, thank you' to opportunities that fail the hedgehog test" (p. 17). However, this stance does not refute the desirability of alternative revenue streams. Quite the contrary, as Collins relates, "the wide variation in economic structures in the social sectors increases the importance of the hedgehog principle– the inherent complexity requires deeper, more penetrating insight and rigorous clarity than in your average business entity (p. 20). Colleges and universities my be similarly served if leaders can successfully determine their core mission, and then discover revenue-producing possibilities that coincide with that mission.

The Management System

If an institution is fortunate or skilled enough to gather a group of individuals who have the entrepreneurial spirit, are well-respected by their colleagues, and have originated one or more ideas that show merit for developing non-traditional revenue streams, then a management system tailored to a nontraditional revenue producer in a higher education environment must also be in place for executing the possibility.

One component of such a system should be the very visible support from the president, as illustrated by numerous authors (Clark, 1998, 2002; Schramm, 2006; Koch, 2007 to name but a few). This support might be communicated as a piece of the overall vision of the institution, but must certainly be expressed in long-term actions in addition to oral and written communications by the president and governing board.

A second element of an effective management system would entail the development of incentives tailored for revenue success – no easy task for higher education's traditional compensation system. Koch (2007) speaks to the importance of this, "Even when well-intentioned and motivated people are eager to succeed, they still face the challenge of understanding where and how to focus their time and effort. Successful entrepreneurs use the incentives of the market to determine the most productive course of action. Likewise, employers should use incentives to guide employees toward areas where their attention and effort can create the most value" (p. 143). Similarly, Hearn (2003) stated a similar case for institutions of higher education.

A third general area of a management system would be a process of measurement in place that allows for modifications and exits from alternative revenue streams. Long-term sustainability cannot be attained if expenses exceed revenues, and although it is relatively easy to externally judge whether a nontraditional revenue producer is appropriate, once programs are put in place without controls, they often exist in perpetuity. Having the discipline to ask questions and then act on the answers is a key to entrepreneurial success. For higher education, appropriate questions modified from Koch (2003) would be "What are the key drivers of value we create in this program?" and "What are the key drivers of costs we create in this program?" and "What performance will lead us to eliminate this program?"

A fourth area that is an important consideration in this area is in clarifying roles of responsibility and accountability. This is especially important in a situation where a college or university is attempting to build or buy a non-traditional revenue stream. "Expectations are most meaningful when they are measurable, even if the measures are subjective. There is a temptation for expectations to be close-ended…rather than open ended." (Koch, 2003, p. 130). An example of this would be the expectation for meeting a certain minimum number of

new students in a government testing program, rather than an objective of maximizing the number of new students in a government testing program.

Additionally, the question must be answered as to where authority for decision-making falls, and where additional revenues flow. While incentives for individuals should be put in place, departmental incentives must also be considered to avoid the turf battles notorious in higher education environments.

CONCLUSION

This paper has been a brief attempt to condense current information concerning the diversification of revenue streams for colleges and universities in the United States, as well as provide limited guidance for leaders considering such diversification for their own institutions.

The route leading to building successful non-traditional revenue producers is hazardous. For-profit start-ups fail more often than they succeed (Bhide´, 2000); combining the harsh reality of a start-up business with the complexities and organizational culture of a college compounds the difficulty of such an endeavor. And yet, the diminishing support from the governmental sector in many areas of the world virtually demands that institutions pursue efforts to diversify their income. Additionally, there are many examples where this has been done successfully, and the knowledge, skills, and strategic advantages found in many universities provide some confidence that the achievement is possible. Leadership that generates the right system for employees to maximize their entrepreneurial spirit will also maximize the possibility for success.

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PRACTISING SUSTAINABLE HIGHER EDUCATION AND THE KNOWLEDGE ECONOMY: THE ROLE OF PRIVATE HIGHER EDUCATION INSTITUTES IN MALAYSIA (HE Management Practices towards Sufficiency and Sustainability)

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ABSTRACT

This paper presents a study of the role of private higher education in Malaysia. Malaysian higher education has been through significant shifts in growth and direction since the 1997 regional crisis. Since 1997, Malaysia has embarked upon a quest to become a regional educational hub and a knowledge economy meaning that the state aims to increase the participation rate in the university age cohort and create an information communications technology (ICT) savvy labour pool in order to become globally competitive. The means to such aims has incrementally shifted the responsibility of training skilled graduates from public universities towards the private higher education sector. Based on current research being undertaken toward PhD candidature, this paper highlights some of the most pressing issues that face the private higher education sector in Malaysia and which can now be seen as a key factor in human capital development. This paper will chart the growth of the private higher education industry, by examining the aims of Malaysian government policy in relation to higher education, and mechanisms of implementation. The paper will also examine the conflicting dichotomy of industry demands and state limitations. These demands and limitations are crucial relationships that can significantly contribute to the ongoing viability of the higher education sector and towards the realisation of a Malaysian knowledge economy.

INTRODUCTION

Liberalised in 1996, as a mechanism to alleviate the stress of the public higher education system, the private higher education industry in Malaysia has expanded into an industry that has served as a model of education expansion in newly industrialised and developing regions. The Malaysian higher education industry has done remarkably well in creating a diverse and multi tiered market constituting various institutional sizes and responding to niche markets. Aside from absorbing the growing numbers of the domestic tertiary age cohort, the private higher education (PHE) sector has also become a key actor in the country's overall national development strategy. This conference paper is based on current research being undertaken towards a PhD, and will contribute to the central body of the thesis.

The primary research focuses on education and development policies that are discussed in the Sixth Malaysian Plan to the Ninth Malaysian Plan, academic publications and various government agencies' publications to form a base for analysis. The Malaysian Plans are and are considered key to the literature review as these publications are the overall development policies for the nation. The Malaysian Plans are the central development policy papers, with each plan covering a five-year period. The Malaysian Plans used in this research range from the Sixth to the Ninth Malaysia Plan (the Ninth being the current plan). In tandem with the macro development strategies of the five-year Malaysian Plans, research has identified three key broad policy objectives to which the PHE sector has become increasingly central, that is: human capacity development, improving on the country's information and communication technologies (ICT) industries and developing the education section into a regional hub of academic excellence. The Sixth Malaysian Plan (1991-1995) was the first national development publication to recognise and publicly incorporate the PHE sector, which is why this study selected this Plan as the start of its research timeline. The aims is that this paper

will report growth, changes and observations of the PHE through national policies as well as an analysis of the broad policy objectives which are considered to be strongly supported by specific government objectives. Curiously, despite being a key player in the nation's development, there is relatively little policy literature on state directives of the PHE sector's role. This paper, therefore, will chart the growth of the PHE industry, and its role in national development and the conflicting dichotomy of industry demands and state limitations, within the context of the three broad policy objectives outlined.

FIELD WORK: A CONTINUING PROCESS OF DATA COLLECTION AND ANALYSIS

This research is a qualitative study in the PHE sector. As such, the study is based on three sources of data, which are: primary documentation data drawn from government policies and legislation; secondary documentation data drawn from various sources of academic and non-academic literature; and interviews

Sources of Primary Data

Primary data was sourced from government documents (as previously mentioned) and focuses on publications after the Sixth Malaysian Plan, which was the first document to publicly acknowledge the role of the PHE sector including the Seventh, Eighth and Ninth Malaysian Plans. Key pieces of legislation such as the Private Higher Education Institutional Act of 1996, the National Accreditation Board Act 1996, the National Council of Higher Education Act 1996 and the amendments to the 1960 Education Act (1995) and the Universities and University Colleges Act (1996) are also included in the primary. Additionally, this paper draws upon various other policy publications (such as the 2006 Zahid Education Report) and ministerial papers and speeches to supplement the primary data.

Sources of Secondary Data

Some key academic publications used in this study are Tan Ai Mei's 2002 *Malaysian Private Higher Education* publication (originally written as her doctoral thesis) and Molly Lee's 1998 *Corporatization and Privatization of Malaysian Higher Education* and 1999 *Private Higher Education in Malaysia* which provide a foundation for this research. Seminar and conference papers dating from 1996 onwards from a variety of sources such as Organisation Economic Co-Operation and Development (OECD), United Nations Educational, Scientific and Cultural Organisation (UNESCO), United Nations Development Program (UNDP), is also used to complement the academic publications. Monthly media publications available in the public domain have also been used to as sources of secondary data. These include articles from *Education Quarterly* and the Malaysian mainstream and alternative news outlets such as *The Star* (and its weekly education section)*, The News Straits Times* (which also has a weekly education segment)*, and online journals such as *Aliran, Malaysiakini* etc.

Further data collection

Triangulating the data derived from the content analysis, the researcher has over the past twelve months conducted face to face interviews with PHE stakeholders and actors of varying positions and roles such as lecturers, advisors to political parties, marketing VPs from private university colleges, academic program directors, CEOs, social commentators and a vice chancellor. It should be noted that while the pool of participants and the data gathered from the interviews have significantly contributed to the research, the investigations are not yet complete as I intend to further expand my pool of participants. Thus far, the research draws upon fifteen initial interviews.

HUMAN CAPITAL DEVELOPMENT AND THE K-ECONOMY

One of the key ideas behind human capital development in Malaysia is the explicit link between education and wealth creation. Traditional human capital theory suggests that educational development and change, particularly with reference to the need for greater and more sophisticated manpower, is a key propeller driver enforcing change for the better. In its most basic form, this human capital theory is based on the assumption that the expenditure on

education for the individual enhances their ability to participate and contribute to the nation's development. Hence education creates human capital, a human resource development concept that the Malaysian government has placed much faith in, particularly in secondary and post secondary education and training. In Malaysia, such human capital development (HCD) is predominant in the state's policies on education. The Sixth Malaysia Plan exemplifies the endorsement of education as a tool for HCD when it states:

> Human resource development will be a major thrust in the Sixth Malaysia Plan as the achievement of socio-economic objectives depends on the availability of an educated, skilled and trainable labour force. Towards this end, education and training programmes will be further expanded and improved, not only to equip individuals with the appropriate knowledge and skills (…). In addition, such programmes will help develop a technically competent labour force that will enhance the competitiveness of the Malaysian economy. (Malaysia 1990)

Realising that the nation's young population are a huge untapped pool of potential, the Malaysian government turned its attention to the combination of youth development and capacity building. At the same time, it appeared to realise that the PHE sector could also participate in the country's long-term capacity building.

The Role of Private Higher Education in Human Capital Development

The introduction of the 1996 Private Higher Educational Institutions (PHEI) Act, the Accreditation Act and the National Council Act are considered some of the most significant introductions into the private higher education sector (Lee 1999, Tan 2002, Lee 2004). By creating and passing an established legal framework, the government allowed operators, fairly independent from state intervention, to provide educational services to a large gap in the domestic market. The PHEI Act gave legal guidelines on how providers were to operate, whilst the Accreditation Act provided quality assurance (QA), quality control (QC) by overseeing accreditation for courses, awards, etc under it's National Accreditation Board(commonly known by it's Malay acronym LAN). Finally, the National Council Act also serves as a legal body for governance for private institutions.

The purpose of these mechanisms was to ensure the longevity of the PHE sector and the policy objectives that the government has for it. Central to the government's plan to advance towards a k-economy (and this is evident in several Malaysia Plans) is to develop an increasingly sophisticated workforce in ICT industries. Biotechnology, IT, multimedia, medicine, agriculture, manufacturing are considered some of the critical areas that the country is focusing on to build a k-economy. The Ninth Malaysia Plan made a significant shift from previous policies, giving significant attention to education and vocational training, and youth participation in post secondary education. In the Ninth Malaysian Plan, the government has established a target to reach a student participation rate of forty percent at a tertiary level by 2010 and to double the post graduate participation rate and increase the number of academic staff with PhD qualifications, all of which is intended to contribute to the creation of the intelligent state. This is the first time that a specific target participation rate has been announced in relation to the HE sector. To further bolster student enrolments government policies are explicit in pushing for an increase in student numbers at HE institutes, most notably attempting to encourage more science and technology (S&T) students and attempting to increase post graduate and international students in Malaysian HE.

Thus the government's strategy of the role of PHE is to attract and train potential students in these critical fields. Significant to this objective is to boost the number of post graduate and research students in K-economy related fields. A recent estimate of [numbers enrolled in] the PHE sector claims that it already produces roughly half of undergraduates in Malaysia (Goh 2006), so it is hoped that the private players may take the next step to training more skilled

graduates at a post graduate level. Because the PHE sector has been responsible for absorbing the growing number of tertiary students, the push for increasing postgraduate students would also likely fall, to some degree, to the private providers. However, the public HE system has already suffered from a student population bloat, particularly in post graduate courses since it already takes in the majority of the domestic post graduate student population. This will make it difficult to for PHE to absorb an increasing number of students as the institutes also face other restrictions on training students at a post graduate level.

One of the issues that will need to be addressed by the Malaysian government and/or PHE's attempting to increase student numbers is the lack of qualified staff to oversee courses. In the public HE sector, the MOE has proposed that lecturers who do not have PhD or post graduate awards be given extended sabbatical and financial support to pursue appropriate qualifications. Such support however is not extended to the private sector, and PHE institutes are left to their own devices when it comes to staff recruitment, development credential standards and income generation. With the exception of the larger universities (especially foreign branches such as Nottingham and Monash) that can afford to train staff or allow sabbaticals, the majority of private providers do not have the resources to implement these measures. Moreover, the suggestion that increasing student numbers will increase student graduates does not address two further problems that have profound potential to have an impact on the Malaysian economy: the brain drain , the mass exodus of tertiary educated and skilled workers leaving the country, which continues to cause concern and the linguistic divide between public university graduates and private university graduates which has creates employment challenges for the economy and also a tension between English and non-English speakers.

Quality Assurance, Quality Control and Ongoing negotiations

Issues of quality assurance (QA) and (more importantly), quality control (QC) has been a bane to the Ministry of Education and the HE sector alike, since a previous lack of regulation (coupled with a lack of experienced staff at LAN) saw the PHE industry run rampant with unscrupulous providers and students and parents suffering as a result. Unscrupulous providers often promised or offered courses and degrees sans deliverance of quality or in many cases were bogus enterprises that took payments of fees and never provided any service. QA and QC, while significantly improved, still faces problems. According to participants involved in PHEIs, accreditation is very formulaic, and heavily "document based" (Participant 6). This is not to suggest that the LAN or the government lack the will to implement a sustainable system, but rather the body itself suffered from a lack of experienced staff coupled with a rapid growthof the PHE sector. Participant 1 succinctly discussed this specific problem:

> When you begin to have, like you have in Malaysia, 600 colleges and there is a very small bureaucracy if they were to start looking at substance they're going to require a lot of time and energy (…). None of it is there in the bureaucracy, limited resources, certainly limited experiences and to handle 600 colleges and university colleges(…) it is a tremendous landscape and these guys don't have the time unless they say "Look we need to break it down into very symbolic things. It's in forms, all I have to do is look at these forms and tick (…) the check boxes.

A lack of experienceed staff working for the accreditation board during its inception years has also created a long standing ripple effect. The degree of the inexperience in LAN is still quite fresh in most participants' memory, and PHE industry actors have pushed for a changes and improvements with the accreditation board and process. Additional to the documentary process of getting courses accredited, upgrading of awards and the conferring of awards can also be a hazy process for private operators. Guidelines for upgrading are unclear for some PHE institutes, and the provisional accreditation process practiced by LAN is problematic for

providers, parents and students. Provisional accreditation means that a new course subject does not get full accreditation, but a provisional one and is subject to a review by a LAN board when the first cohort enrolled into the provisional program enter the final year of the course. This causes apprehension amongst parents and students who commonly bring up concerns that a provisional course is not full accredited and that they maybe wasting their money and time on a course or subject that might be halted prematurely or their qualification becomes null and void. The MOE have already taken steps to introduce changes to the accreditation process by introducing new legislation and a new accreditation body: the Malaysian Qualifications Framework and the Malaysian Qualifications Agency, meaning that the accreditation process will become more centralised, thus aiming in becoming less bureaucratic and more efficient in approving and regulating courses and degrees in all universities (Shahabudin 2005, Bernama 2006). The introduction of both bodies has been welcomed, judging from the responses from the participants so far interviewed. However the MQA and MQF are yet to materialise from paper-based plans and some interviewees question the strength of the leadership spearheading the MQA. It still remains to be seen when these new entities will be introduced to the HE section, and the PHE sector is hoping that, with over 10 years behind it, that there will be a strong sense of leadership in these proposed organisations in order to ensure that the accredtation process runs more smoothly and efficiently compared to the past.

BUILDING ICT INDUSTRIES AND R&D CLUSTERS

Unlike previous Plans, the Ninth Malaysian Plan has given a greater relevance to the importance of higher education and the PHE sector. Education and post secondary training feature predominately in the second thrust, which is essentially a human capital development theme. The nurturing of such "first class mentality" includes harnessing "knowledge, innovation and values- in sum (…) will be the key determinants of Malaysia's future success as a knowledge-based economy". Measures for capacity building include: comprehensive improvement of the education system; producing universities of international standing, ensuring that tertiary institutions meet the needs of employers; creating more avenues for skills development, training and lifelong learning for the labour force at all levels, including ICT; and refining and implementing programmes which encourages the development of a strong moral and ethical culture

The Ninth Malaysian Plan also introduces an academic cultural shift. While the mid-term review of the Eighth Malaysian Plan (2000-2005) highlighted a growing focus on arts and design, the Ninth Malaysian Plan has been more explicit in encouraging a greater public involvement in such areas such as multimedia, photography, and communications. While still encouraging stronger participation in ICT courses, the growing acceptance of arts and design courses indicates the state's expanding understanding of what industries are encompassed the k-economy and also indicates a gradual cultural shift in the traditional Malaysian understanding of preferred learning subjects. Traditional preferences have leaned towards science streams in secondary and post secondary institutes. Specialised occupations such as accountancy, law, business, engineering, and medicine are given premiere social status. While these conventional preferences are still considered very popular choices for students and parents, there has been a steady increase of student enrolment in art and design courses. Multimedia and design skills have been given some mention in the Ninth Malaysia Plan as they require technological and complex soft skills and constitute a strong component of a very profitable service industry. Nevertheless, science and technology related vocations remain the primary focus of the government's HCD policy. Higher education is now considered the foremost player in developing Malaysia's k-economy, this being evident with the RM17.6 billion that the sector is expected to receive, an impressive forty three percent of the entire budget dedicated to the education and training portfolio.

To implement the plans of expansion of the k-economy, a series of initiatives in human resources development were initiated to accelerate the growth of the S&T sector in Malaysia. These included increasing the number of students enrolled in science, technical and engineering streams at secondary, tertiary and post graduate levels; increasing support for science fellowships, encouraging R&D at public research institutes and higher education; strengthening industry-led training programs; establishing scientific programs in research institutes and higher education establishments (which would be linked with the related industry); and designating four universities as research universities. The four universities are *Universiti Malaya*, *Universiti Kebangsaan Malaysia*, *Universiti Putra Malaysia* and *Universiti Sains Malaysia* (all of which are public universities). Additional policies have also outlined the aim to increase Malaysia's national R&D capacity and capabilities by increasing state R&D spending.

The government has also incrementally increased the funding accessible to academics of both public and private universities, with a strong focus on biotechnology and other sciences. Private institutes traditionally have little external funding and any growth of a funding body and perhaps financial support for institutes is encouraged by the sector. The biggest problem faced with the funding, from the perspective of the PHE sector, is the uneven distribution and limited options for HE institutes. So far there is only one body (IRPA) that awards funding to HE institutes (both public and private institutes) and there have been reported difficulties for private institutes attempting to gain access to most of the funding. Nearly all the participants involved in this study concur that funding for PHE institutes is almost nonexistent, with a perception that public institutes (especially the designated research universities) are given priority. This has caused some discontent particularly when the IRPA funds ran out before the end of its fiscal year. The majority of private institutes, especially staff members in foreign branch campuses, find it difficult to benefit from receiving government research funds. Table 1 outlines the number of research grants awarded to HE institutes in 2002 (1263 projects and an investment of RM363.3 million altogether), segregating between public and private institutes.

Table 1 Approved IRPA grants for HE institutes

Public Institute	Number of Projects	Private Institute	Number of Projects
Universiti Putra Malaysia (UPM)	402	Multimedia University	22
Universiti Teknologi Malaysia (UTM)	224	Universiti Tenaga Nasional (UNITEN)	9
Universiti Sains Malaysia (USM)	205	Universiti Tecknologi Petronas (UTP)	8
Universiti Kebangsaan Malaysia (UKM)	175	International Islamic University Malaysia (UIA*) *Malay acronym	6
Universiti Malaysia (UM)	143		
Universiti Teknologi MARA	29		

(UiTM)			
Universitit Malaysia Sabah (UMS)	17		
Universiti Malaysia Sarawak (UNIMAS)	14		
Universiti Utara Malaysia (UUM)	5		
Universiti Pendidikan Sultan Idris (UPIS)	4		
Total (Overall %)	**1218 (96.43%)**	**Total (Overall %)**	**45 (3.57%)**

Source: Malaysian Science and Technology Information Centre (MASTIC) 2002

It is not merely an issue of allocation of funds which hinders the R&D environment in HE. Capital outlay for PHE is expensive (and to date that expenditure has been mainly in relation to undergraduate programs) (Lee 2004). Setting up post graduate courses, particularly in the science field with its demand for up to date technology and labs, potentially causes greater financial tensions for institutes. Furthermore, trained staff who are able to supervise at a post graduate level are also difficult to source, and is another exercise that requires time and effort (a practice that is not necessarily compatible with a profit making enterprise). As such, in terms of profit generation, the establishment of post graduate courses is a major financial challenge to PHEI's, inasmuch that postgraduate courses available in PHE are quite marginal compared to the public institutes. Arguably most interviewed participants believed that improving the allocation of funding to stimulate the research sector. However, this seems to be only a part of the problem, as some have stressed that the country also needs to focus on recruiting and retaining graduates and skilled workers.

CREATING A REGIONAL EDUCATION HUB
The Ninth Malaysia Plan outlines a further ambitious aim for the education sector: to become an education hub of excellence. While Malaysian HE has an established reputation overseas, it would seem that suggesting that the fledgling industry can rapidly support a regional hub of educational excellence is still an ambitious task.

40,000 to 100,000 and beyond: increasing international numbers and skilled HE staff
Education is a well known business in Malaysia, and the country (with its large offerings in post secondary institutes) has been pushing to develop the HE sector for an international market, with a focus on attracting students from within the Asian, Middle Eastern and Africa regions. International students are now increasingly becoming important to the economy of the education sector and it is hoped that Malaysia's cultural and geographical proximity to the Asian region will play to its advantage as one of the destinations of choice for education in Southeast Asia. Recently the government had announced that it aims to more then double the number of international students in Malaysian HE institutes to 100,000 by the year 2010 ("Bid to double foreign students at varsities" *The Star* April 23 2007) Varying estimates of the number of international students in Malaysia range from 40,000 to 50,000 (*The Star* April

23 2007, Participant 6, Participant 7) and these figures include international students in primary and secondary school students. Regardless of the number of students, a doubling of numbers within a three year time frame is indeed an ambitious task. Moreover, attracting and increasing student numbers into Malaysia is not an easy task. The treatment of international students in Malaysia has gained a somewhat notorious reputation with common complaints of discrimination and harassment, and Malaysia continues to compete with its regional neighbours in the HE stakes.

Marketing HE in Malaysia: the private sector's role

The Malaysian government has close working relationships with several private institutes. Limkokwing University of Creative Technology (LKW) for example has a very close relationship with the government, which has lent moral support to the institution's expansion into Botswana. Such close working relationships between key PHE players and the Ministry of Education is relatively common in the sector. Several interview participants in the study have continued to develop and harness such close working relationships with the Ministry of Higher Education, even comparatively smaller private niche institutes have a one-on-one relationships with members of the Education Ministry. Close working relationships between the Ministry and institutes are viewed as a beneficial both ways as institute leaders have a immediate channel for information and the Ministry too has a relatively quick channel to insights, goings on and industry attitudes in the private sector. Arguably this relationship building supports the government's effort to aggressively market the domestic PHE sector alongside the public HE sector to make Malaysia a more attractive and diverse educational destination for international students.

However, the general consensus gathered from all participants is that these relationships offer mainly moral and verbal support for institutes. PHE institutes are generally left to their own devices when it comes to expansion, and there is no financial support from the government should PHE providers wish to expand; either in terms of physical presence or program provision. Private institutes are currently allowed to run accredited foreign degree programs, on the provision that institutes phase out foreign degree programs in favour of locally developed programs. The logic behind this strategy is to provide the local institutes with a base on which to build their reputation and academic foundation and to provide a method of bringing in international students. The eventual intent is to phase out the foreign degree programs once the institute is well established. So far, the phasing out of foreign degree programs has not materialised and one participant, perhaps rightly, pointed out whether the majority of international students coming into private institutes are doing so for the reputation of the degree or for the reputation of the local institute. Naturally there are exceptions to the rule such as LKW and also Monash, Swinburne, and Nottingham but the former has only recently received self accreditation for degree programs and the latter are foreign branch campuses of already well established Australian universities. A general consensus among PHE interview respondents has revealed that some distinct issues hinder the country's progress to create a regional hub. According to them, the most common problems are related to the paucity of inter-institutional communications, minimal government-to-government engagement, unclear guidelines on how to recruit and classify international students, lack of clear information on accreditation, and a lack of regional engagement with other institutes. The previously discussed vexed issue of improving the quality of staff in PHE sectors remains a barrier to growth as the majority of staff members in the private sector (with exceptions of foreign

campuses) are not able to obtain time or resources to engage in sabbaticals, limiting the amount of academic training they can be involved in. Considering that the state wants to increase the number of PhD holders within academia this is predictably a long term problem that requires urgent attention.

CONCLUSION

The objective of this study is to analyse issues related to the growth of PHE since the government took measures to liberalise the HE market in 1996. The move to open up the education market to private providers had its genesis in several factors, one of the most important being the need to alleviate the stress of supply and demand that was faced by the public higher education. A series of mechanisms, such as the legal framework and regulatory bodies that were introduced allowed for the PHE sector to flourish. The influence of the private providers has reached a stage where they have become key to some of Malaysia's broadest and most ambitious developmental policies. In the context of Malaysia's push to become a knowledge economy, three broad policy objectives were identified vis-à-vis the PHE sector's role: human capital development, building ICT industries and R&D clusters, and creating a regional educational hub. The state's expectations for the private sector include increasing student enrolments in ICT, S&T and post graduate fields in order to produce highly skilled domestic and international students. Private providers are also expected to increase the number of teaching staff with post graduate qualifications as well as building a strong R&D sector to complement their academic training. Creating a regional education hub by boosting the reputation and the ability of the HE to attract and train international studies is also a key role that PHE industry plays in Malaysia. However these emerging role expectations are, not unexpectedly, eliciting demands from the PHE sector which have advocated for a more central and organised system of quality control and quality assurance that would stimulate and foster a conducive environment for HE. The heavy monetary demands for creating or boosting ICT courses and R&D clusters, along with the lack of financial support from the government means that the broad policy aims on which the PHE sector is expected to perform have been, remain, and will continue to be difficult to achieve. Nevertheless, this paper has not suggested that the PHE industry in Malaysia is weak. On the contrary the country has managed in a very short period of time to create a multi tiered, diverse industry that offers a varied levels of programs to niche and popular markets. It remains to be seen whether these policy strategies in correlation with industry demands, can be overcome and thereafter whether Malaysia can succeed in creating the kind of HE system that the country is striving for.

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COMMUNITY EMPOWERMENT AS TOOLS FOR POVERTY ALLEVIATION OF THE NEWLY URBANIZATION POOR : A CASE STUDY OF   BANGPLEE DISTRICT, SAMUT PRAKARN PROVINCE

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ABSTRACT

This research provides information for setting a strategic mapping involved in academic service plan of the Chandrakasem Rajabhat University. It will enhance lifelong learning, effective use of information technology and ability of stakeholders cooperation and communities strengthening.

The research's purpose was to formulate a participatory model for poverty alleviation of the poor in the newly urbanization, Bangplee district, Samut Prakarn province. Learning process and community empowerment were utilized by analyzing the community master plan and potential development strategies are proposed using the qualitative research.

The targeted community was impacted by land-restoration for Suwannaphumi airport construction of the government. The life style and the occupation of people in Nongprue sub-district, Bangplee district, Samutprakarn province were primarily agriculturist with subsistent economy. Then, people seek to be employed in factories or in agricultural sector where the income is not consistent and sufficient to survive the family members. Some labors have to work in farther factories outside the Bangplee district.

The study reveals that the characteristics of the poor in newly urbanization are "more consumers than laborers". To solve the poverty problem are to establish occupation groups and saving groups in order to help oneself, each other and to the disadvantage.
The researchers had recommended model called "community empowerment" to be used for poverty alleviation of the poor. Tambol Administration Organization (TAO) needs to provide education, capital / inputs and business to the people to empower them. The existing empowerments such as man-power, association and co-operation empowerments can lighten the poverty to some extent. The researchers propose His Majesty the King's model of sufficiency economy to be implemented for sustainable poverty alleviation.

INTRODUCTION

Although the main-stream of Thailand economic development that emphasized on economic growth, it revealed the impact of the economic crisis in 1997. Lack of natural plan for managering the natural resources, educational failure, health management fatique, highly family devastration, and also the social gap. Those indicated the national developmental imbalancement. However, in the 21[st] century, alternative development is raised as a sub-stream developmental strategy in Thailand.

The poverty affected by the national development plan was complicated problems. This included people individual factors which were low education, lack of specific working skills, lack of land and capital and structure factors-provided by governmental system. The later reflected on ineffectiveness, inequality service and unfairness. These induces the increasingly Thais social conflict. In the past, the poverty alleviation confronted many obstructedless that

affected nation mile-stone (Narong, 2002). They should be amended by concernering on truly and social status and community concerned. The community might be introduced to analyzing their poverty alleviation by themselves. And set-up their needs of development priority based on local wisdom, social capital and culture in the community. These showed that social multi-factor and social participation are important in the process of development which strengthen community empowerment and sustainable development.

This research purpose was to study community participatory model for poverty alleviation of the poor in the newly urbanization, Banplee district, Samut Prakarn province. Learning process and community empowerment were utilized by analyzing the community master plan and potential development strategies are proposed using the qualitative research.

METHODOLOGY

This research metrologies are qualitative method by setting focus group discussion (brain storming) in-depth interview and questionnaire the key performance and observation of community activity. Participants of focus group discussion were 20 persons. About 70 persons had answered the questionnaires for each of the community. Overall population in Nongprue sub-district is 2,493 persons.

RESULTS AND DISCUSSION

1. Suwannaphumi International Airport Newly Urbanization Context.

Suwannaphumi International Airport, newly urbanization community is located in Nongprue sub-district or "Nong-ngu-hao" this area primarily big swamp, grove or thick woods plentiful of poisonous snake. Nongprue sub-district composed of 9 villages, when land-restoration for airport construction in 1993 decreased to only 3 villages. The community are located in the east of the airport, namely klong-nong-ngu-hao village, Klong-tong -kung village and Ruam-jai-patana village. These area is floodplain which is suitable for rice growing. The area is composed of 6 canals : Nong-ngu-hao, Tong-kung, Bangna, Kaui, Nongprong and Bangnamjeud.

The primarily agriculturist fish-pond, fresh water fish culture such as Tilapia, Tapein, Chinese fish, Song and water mimosa growing. The agriculturists are expert in growing fruits and mango orchard. The way of life is unambitious and sufficient life, happy, peaceful and not complicate.

2. Change to Newly Urbanization

The people lifestyle have changed, when the government had policy to construct news international airport in Nongprue sub-district to subsidize Donmaung airport which is narrow and not sufficient to the increasing service. In addition, Samut Prakarn provincial office has planed and budgeted for road constructing and other infra- structure during 1982 to 1994.

In 1995-1996, the government land-restoration, had migrated the people from initial land. There were about 2,000 households effected. They were congregating for protest to the land-restoration fare subsidy. The government paid each family 800,000 baht, the money was used for; 1) 200 square meters land for 400,000 baht. 2) Some family lead old wood that demolish from the hometown comes to build new house. In some cases, 3) National Housing Authority accompanies construct new house in 400,000 baht each household. 4) The money had that from surrendering had not left for investment earns a living. 5) Some people go to rent a

house because they have not enough money for buying new house. The local government propose infrastructure, road between village and water-supplied.

3. Changes on the Way of Life

The land-restoration change the people's way of life due to lacking of land for growing plant. Someone change to a labor as mimosa picking, fishpond catching labor, someone change to small business in the village. Their salary is not uncertainly. Mimosa picking more uncertainly because growing take time 7 weeks for harvesting. After mimosa picking season they will be unemployed for 4 unemployed weeks, waiting for mimosa growing-up and harvesting next crop.

Mimosa picking have a good salary around 3,000-5,000 baht($ 85-142) per month. But it is not enough to earn living of other in their families. Salary of mimosa picking different from the characteristics of task. Some person pick up mimosa from the pond, received 200-300 baht per day wage, some person wash mimosa in the pools edges and tie up together, received 100-150 baht per day wage.

Someone moving to labor in the factories around the village such as flour factory, glass factory, textile factory and perfume factory. Someone work as motor-cycle taxi driver in the village.

4. Discourse to the Poor in Newly Urbanization Area : Suwannaphumi International Airport.

The word "Discourse" means the outputs of the facts, such as social regulations and norms that make a man define himself based on output of his knowledge.(Apilya, 2000)

The sources of the article the discourse of the poor originated from the people forum of newly urbanization community that defines the poor mean the group of people that their lands were restorated to the government for the purpose of building up Suwannaphumi International Airport in Nongprue sub-district composed of six villages : those people immigrated to settle at the present lands; as consequence they are landless people, rent the houses, have low incomes and not be balance to the high expenses.

Some families have to borrow money from the neighbors for consumptions, have no eligible to borrow the money from village funds because their neighbors do not sign for guarantee. It is different for them to apply for the jobs since their low education. The poor in this article included the elderly and the disable as well.

The result of the study founded that, the people of newly urbanization community have concluded that the causes of the poverty originated from lacking of land for planting and living; before they were farmers, today they are landless because of land-restoration as mentioned above. They have to rent the lands for agriculture, lacking of the capital, having low wages, as the same time the cost of living in higher than before. Some poor families have no disciplines for daily expense and some families have the children and the old ones as the word said "more consumers than laborers". Some people are poor because of being lazy, alcoholism, refusing hard working, too picking for employment and gambling.

Mrs.Waraporn, the farmer who had the impact from land-restoration giving the information: since the case of land-restoration she had to migrate to settle at the present land, she owned a piece of land with a small house and rent the land from the head of the village for planting mimosa that was sufficiency economy. But now she has to pay for everything. There are many families have the same problems like Mrs.Waraporn.

Mr.Vichien one of the farmers who is in case of land-restoration said that before he owned 12 rais (5 acre) for planting mimosa, he had seventy thousands baht for net-income per year, it was sufficient for living. At present, he has many serious problems, because he does not own the land but has to rent lands with high cost in need. The solutions for the poor with community empowerment.

5. The Solution of the Poverty Utilized Community Empowerment

The people of newly urbanization community Suwannaphumi International Airport suggest that the means to solve the poverty as : be diligent, do all kinds of works, be economical, no gambling, set up group for occupation, set up saving club for self-reliance and the others, help the elderly and the disadvantage. In the field of education, offering free school-fee, training vocations for incomes generating.

Community empowerment for solving the poverty strategies are : (Praves, 1998)

1) **Empowering learning** by training vocations, offering opportunities for employment, having justice for selling products. The empowered-people can be defined as the ones who are educated, be capable and potential, lastly having natural leadership.

2) **Empowering group** by setting various groups to motivate consciousness for performing public activities, such as, cleaning the streets, collecting the rubbish and prunning the trees. The vocational field, setting up the house-wife vocational clubs for increasing incomes such as preserving mango, and cooking sweets.

3) **Empowering hospitality**: the people who re-settle together should help each other as good neighbors and friendship.

4) **Empowering capital and business:** doing the small and medium enterprises (SMEs) by using the village funds, setting groups to borrow the fund from the Bank of Agriculture and Agricultural Co-operatives for earning the living. Later, setting the saving club in the community to save and give social welfare for the old to have life assurance and security.

Figure 1: Illustrating the problem solutions of the poor with community empowerment.

The farmers of village number one and village number two are the owners of the lands traditionally, but the farmers of village number three immigrated because of land-restoration and earning their living by picking mimosa and fishing. The Nongprue sub-district organization solves the poverty of the people by offering the social welfare for the disadvantage and promoting the vacation by supporting to plant mimosa without chemical pesticide, fertilizers and other vegetables by planting around the houses and the edges of the pools. The other side the officers of the Nongprue sub-district organization arrange the morning farmer market for direct selling the vegetables for the consumers: on the other hand, the villagers receive the support from the office of Land Development of Samutprakarn province about producing bio-fertilizers.

CONCLUSION

The life of the poor in newly urbanization community Suwannaphumi reflects the real facts of the society impacted from the human resettlement as well as the economic community based on the products from agricultural sectors. The villagers change the way of life from farmers to be laborers in the factories and employers to pick the mimosa from the neighbors farms instead of their own farms as before: they have no regular employment as the result of income and expense not being balanced. The villagers try to solve their problems by utilizing community empowerment, such as empowering people, group process, house-wife club, saving club and hospitality. All these community empowerment must be the answers and the solution for reducing the poverty, search for the real community empowerment, and use as sustainable problem solving.

Finally, the researchers like to mention the words of Chao-Khun Prarajvichitpatiparn from Suthatthepvararam Temple broadcasting by Thailand Radio Station on November 4, 2005 (2548). Wrong development are "fill up the canal to be the roads, planting trees under electrical poles, cutting trees for house building, building factories to pollute the rivers, scold the monks regularly and work for buying whisky and gambling".

SUGGESTIONS

The researchers support with the ideas of His Majesty the King's model of sufficiency economy to be implemented for sustainable poverty alleviation. He has suggested it as a living guideline for his subjects for more than 25 years, even before the economic crisis recently occurred After the crisis, he stressed the importance of this guideline detailing about how to solve the problem in order to live stably and sustainably under the pressure of globalization and various transformations.

Sufficient economy is a philosophy pointing to living and practical guidelines of people at all levels starting from the family unit, the community, to the government levels.

Development according to sufficient economy is a development that is based on a concept of "the middle way" and "heed" with a consideration of moderation (of consumption), rationalization, good self-immunity. In addition, knowledge, carefulness and virtue are needed to use in any decision and act.

Five compositions of the philosophy of sufficient economy

1) **Frame of thougth** : Sufficient economy is a guideline pointing to how to live and practice properly. It is based on an old Thai way of living that can be used at all time. It is a dynamic and systematic way of "seeing" the world, emphasizing on how to survive disasters and crisis. As a result, the country becomes stable and develops with sustainability.

2) **Characteristics** : Sufficient economy is a guideline about how to live and practice properly. It con be used for self-practicing at all levels according to a concept of "the middle way"

3) **Definition** : Sufficiency is composed of 3 components.

- Moderation : meaning a balance, not too much and not too little for example production and consumption at the moderate level.

- Rationalization : meaning that any decision about sufficiency must be based on sound rationale and considered from all factors associated and expected results with carefulness.

- Good self-immunity : meaning preparedness to any impacts and changes that may take place with a consideration of possible situations expected to occur in the near and far future.

4) **Conditions** : To make any decision and activity with sufficiency, one needs to have both knowledge and morality, classified as follows.

- **Condition of knowledge** is composed of discernment about.

- **Condition of morality needed to be cultivated** is composed of realization of morality including honesty, patience, perseverance, mindfulness, wisdom and heed in spending life.

5) **Practical guideline/expected results** : An application of the philosophy of sufficient economy is a balanced practice and preparedness to any changes including of economy, society, environment, knowledge and technology.

Acknowledgement

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CONSTRUCTING NEW BUSINESS MODEL FOR HIGHER EDUCATION INSTITUTION:THE EXPERIENCE OF UNIVERSITAS ISLAM INDONESIA

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ABSTRACT

This paper aims at discussing the logic and the process of constructing business model for higher education institution as well as its consequences to the management practices of university adopting this model. This paper is based on a project initiated by and done in Universitas Islam Indonesia (UII) as a response to external pressures that have happened since the dawn of the 21st century such as: low student enrolment, privatization of state universities, the establishment of foreign universities, etc. The result indicates that Institution of higher eduction should have its own unique business model in order for this institution to survive and succeed.

INTRODUCTION

This paper aims at discussing the logic and the process of constructing business model for higher education institution as well as its consequences to the management practices of university adopting this model. This paper is based on a project initiated by and done in Universitas Islam Indonesia (UII) as a response to external pressures that have happened since the dawn of the 21st century such as: low student enrolment, privatization of state universities, the establishment of foreign universities, etc. For this purpose UII assembled a project team consisting of full time faculty members led by the author of this paper to do the project.

Initially constructing new business model was beyond the scope of this project. Following Cameron (1984), it was only to redesign organizational architecture in order to restore the imbalanced condition and to adjust to changes in external environment. The idea to construct new business model just came in mind when the project was underway. As the project owner UII realized that merely changing organizational architecture will only have short-term momentary impact that is bound to create the same problem over again and in a very short time. To prevent similar problem in the near future, therefore the team was asked to modify the project design. The focus was then to alter the existing business model while changing organizational architecture is only part of it.

The rest of this paper is devided into three parts. In the first part, major conceptual approaches to business model are reviewed. The second part outlines the logic and the process of constructing new business model. The third part discusses the consequences of adopting a new business model on UII management practices.

CONCEPTUAL REVIEW OF BUSINESS MODEL

The term business model is relatively new. It appeared in academic journal for the first time in 1984 through the writing of Keidel entitled "Baseball, footbal, and basketball: models for business". Even though Keidel did not define what business model is, he proposed the possibility of using sport as a model to conduct business. More specifically, Keidel (1984) said:

> "three major professional team sprots in the United States – baseball, football and basketball – exhibit profoundly different dynamics and exemplify three organizational patterns common in business (and other sectors). Each represents a model – a coherent set of relationships that captures the essence of an organizational form. By studying these models, managers can gain new insight into their own cognitive orientations".

For Keidel it is obvious that sport is not just a game, it is also a metaphor by which business people and managers can learn from as a basis to running business. For example, organization with dispersed, quasi-autonomous units – geographically organized firms, holding companies, franchise-based operations – likewise have much in common with a characteristic of baseball team. These organizations are loosely couple. As happens with university professors, each individual independently pursues his or her own line of inquiry. The whole is roughly the sum of its parts (units). As this example shows, therefore the other sport-specifics such as football and basketball, each with its own characteristic, shall provide different concept of how to run business.

The message of Keidel's article is clear, i.e. a necessity for business organization to have its own unique business model (of course it is not limited to sport as a model) so that it can effectively compete externally, coordinate internally, manage human resource strategically and arrange organizational architecture properly. The idea of Keidel to using business model as a business paradigm however has not been responded by managers, business people, consultants or academicians until 10 years later.

It was only in the middle of 1990, together with the mushroom of e-business, that the term business model started to gain popularity. Among other things, its popularity was triggered by internet boom that provides investors and business people an opportunity to do click-and-mortar business as an alternative to old, conventional brick-and mortal business. Many investors indeed entered into this new business invention but they did not make money, even some of them got bankrupt. The reason behind these is that they are still using old paradigm (old business model) for a new invention (Vickers, 2000). Based on this experience, before entering into this new business invention which is sometimes called e-business, e-commerce or i-business, investors then usually raise questions: what business model is to be used, how it creates values and how it makes money. Since then, as stated earlier, business model becomes the most discussed term and gains popularity particularly among e-business practices. However, it does not mean that this construct can only be applied in e-business but *also in* conventional business (Chesbrough and Rosenbloom, 2000; Hedman and Kalling, 2003; Kraemer, et.al.; and Magretta, 2002). The same is true, this construct is also applicable to other sectors such as higher education institution (Carlson and Fleisher, 2002).

Despite its popularity, infact business model is perhaps the least understood term (Alt and Zimmermann, 2001; Petrovic, Kittl and Teksen, 2001). This is so probably because the concept itself is still in infancy (Lambert, 2006). Therefore it is not suprising if it is seldom defined explicitly (Osterwalder et al., 2005). Some definitions are quite abstract and outward

looking (Timmers, 1998; Magretta, 2002; Rappa, 2003) while others are detail and encompassing of business functions (Chesbrough and Rosenbloom, 2000; Mahadevan, 2000; Osterwalder et al. 2002). In addition, the term is often used when really only one aspect of a business model is intended to be conveyed (Linder and Cantrell, 2000). To have better understanding on what business model is, table 1 provides some definitions of business model.

Table 1

Some definitions of business model

Authors	Definition
Magretta (2002)	*A story that explain how an enterprise work*
Petrovic et al. (2001)	*A description of the logic of business a "business system" for creatingvalue that lies behind the actual process*
Osterwalder and Pigneur (2002)	*A description of the value a company offers to one or several segement of customers and the architecture of the firm and its network of partners for creating, marketing and delivering this value and relationship capital, in order to generate profitable and sustainable revenue streams*
Weill and Vitale (2001)	*A description of the roles and relationships among a firm's consumers, customersallies and suppliers that identifies the major flows of product, information, and money, and the major benefits to participants*
Timmers (1998)	*An architecture for the product, serviceand information flow, including a description of the various business actors and their roles; and a description of the potential benefiits for various actors; and description of the sources of revenues*
Rappa (2000)	*The meethod of doing business by which a company can sustain itself – that is generate revenue. The business model spells-out how a company makes money by specifying where it is positioned in the value chain*
Chesbrough and Rosenbloom (2002)	*A description of how your company intends to create value in the market place. It includes that unique combination of products, services, image, and distribution that your company carries forward. It also includes the underlying organization of people, and the operational infrastructure that they use to accomplish their work*
Mahadevan (2002)	*A unique blend of three streams that are critical to the business. These include the value stream for the business partners and the buyer, the revenue stream, and the logistical stream.*
Linder and Cantrell (2000)	*The organization's core logic for creating value*

What these definitions share is that a business model "....seems to influence the potential revenues and the future success of the business initiative" (Alt and Zimmermann, 2001). In

addition, it is also a logic and an effort of organization to create value for the benefit of constituents it serves. This effort however should be unique, differ from other organization's effort and more specifically should be difficult to imitate (Mahadevan, 2002). In other word, business model is basically a model of a business (Keidel, 1984). It is therefore a construct that guides an organization on how it delivers its services, create values. As a construct, business model is only an artificial representation of reality. It has to detract focus from certain aspects while concentrating on others. It is imposible for all the variables that comprise reality to be adequatly and consitently respresented (Petrovic, Kittl and Teksen, 2001).

Petrovic et al. furthermore said that a model can be descriptive or predictive, but in many cases people would not rely on the outcomes of the model only, when making decision. This means that for organization to succeed constructing business model only is not enough. It must be followed by management actions such as proper strategic implementation, structure and system that align with the model. So, as Magretta claims business model does matter (Magretta, 2002)

As mention earlier, business model should be unique and diffificult to imitate. For example, Universitas Bina Nusantara – one of Indonesian universities uses airline as its business model. Meanwhile Xerox Corp., when it creates copy machine for first time, it preferred to lease rather than selling it to the customers (Chesbrough and Rosenbloom, 2002). Due to its uniqueness, therefore, constructing a business model, to certain extent, is beyond rational justification. Rather, it is sometime subjective and intuitive without formal standard of measurement. A lack of measurement is therefore the main problem of proposing a new business model. The effectiveness of this model at the time it was constructed is unknown. We have to wait for several periods of time until this model is implemented in practice and prove to be really effective.

Constructing new business model: the experience of UII

This paper is based on the project initiated by and done in UII when this university tried to reorient its future. Accordingly, the beneficiary of this project is UII as the project owner. To do this project, the team, following Petrovic at al. (2001) implement action research combined with system thinking. Under the action research, the steps are as follow:

1. Identify problem from different perspective on it.
2. Identify the key factors of the problem
3. Model the core reinforcing and balancing feedback loops
4. Expand the model to full a network
5. Recognize and interpret possibilities for changing the problem situation, recognize steering potential
6. Develop action plan.

Note that the steps are iterative and not as linear as presented above. It is also very important to note that the whole process was carried out in a team of steering committee and the researchers.

Based on the abovementioned methods, below is the logic and the process of constructing UII business model. There are two factors to be taken into consideration to develop UII business model:

1. Internal factors, consist of core ideology and UII core business and
2. External factor that is value added being offered to the customers.

UII Core Ideology

As an organization, UII has its own vision and values, which is also called "core ideology" or "the soul of organization" (Collins and Porras, 1996). This is also called as "guiding belief" (Davis, 1984). It guides the way the organization does its activities. Core ideology therefore influences the life of the organization, including how it designs business model, strategy and structure. In addition, core ideology is also difficult to change, particularly when it is already systemized and crystallized in the life of organization. According to Collins and Porras, core ideology consists of two elements: core value and core purpose. Core value is defined as organization's essential tenets, while core purpose is the reason for being.

In the case of UII, its core ideology consists of three pillars: Islamic values, excellence/perfection and beneficial to the environment (rahmatan lii aalamien) (see figure 1). Using Collins and Porras' term, the core value of UII is Islamic values, while perfection and beneficial to the environment are the core purpose. Since this core ideology is sacred, therefore, it is subject not to change. Accordingly, what the authors can do is just to reinterpret this ideology so that it can be used as a foundation, among others, to develop business model, strategy and structure. The interpretation of this core ideology reveals that UII wants its students and alumni (when they finish study), based on Islamic values, to be a perfect man that have beneficial to the environment. In addition, UII also wants that every thing that is not valuable to this organization must be removed. This means that the business model, strategy and structure should reflect these purposes.
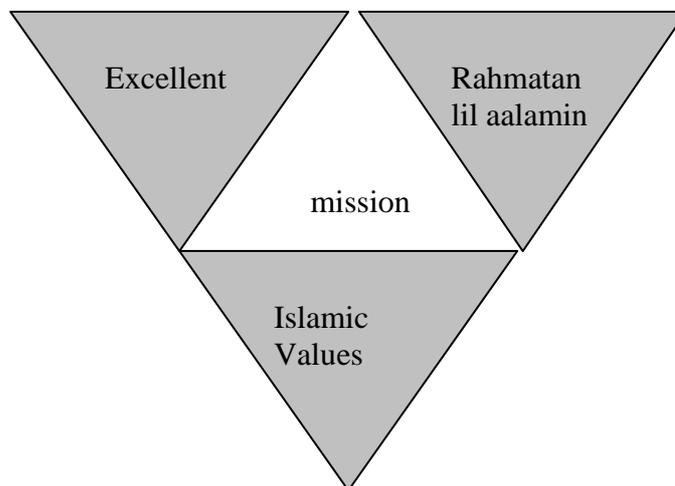
Figure 1: UII Core ideology

The implementation of this philosophy into the core business of UII is that UII is to produce and disseminate knowledge that gives benefit to the customers. The question is which customer UII is going to serve? Is it students or their parents who pay for tuition? Or others? To answer these questions we propose a business model based on an open system mechanism in the process of value added creation. Figure 2 summarizes this model.
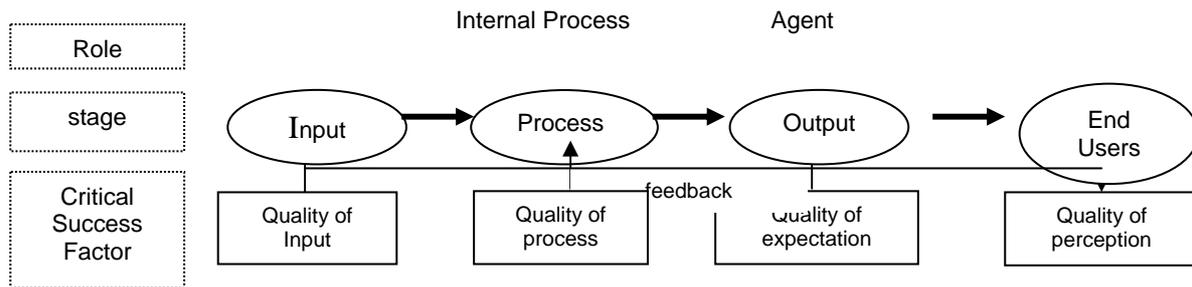
Figure 2: UII Business Model

This figure shows that the role of UII is to transform input into output. Since the core business of UII is education services, therefore, what is to be transformed is basically knowledge. Furthermore, considering that the main input of this process of activity is students, and then, the output is graduated students fulfilled with knowledge produced by this university. The question is who really get the benefit from this knowledge? The authors believe that the purpose of students to acquire knowledge is to be better man so that they could be accepted by the society. This means that the end user or the end beneficiary of this process of activity is not students but is actually the society. We cannot doubt that students also get benefit from this process of activity. But this is just potential benefit unless they implement it in the society. This proposition implies that the process of activity in this university has not yet finished when students are graduated. Beyond that, UII has another job that is to facilitate alumni to enter into society. In this case, therefore, UII has to treat students and alumni not as end users, or as argued by Holbrook and Hubert (2002) as products, producers or customers, but as channel of distributions. By treating alumni as **channel of distribution** or **agent** means that the function of alumni is to bridge or to be liaison between internal party (UII) and external party (society as end users). To be good agent, therefore, alumni should be excellent. Alumni should also smart intellectually as well as mentally, religiously, morally, and socially. In other word, under this business model, UII should provide alumni, not only knowledge but also character and skill. **"Crafting agent to enhance human dignity"** is probably the proper terms to mention the business model of UII.

Consequences of business model

There are consequences to be taken into consideration when implementing the model realizing that business alone is not enough to make organization succeed. First of all, the organization needs some strategies. Conventionally, strategy is basically a formal, long-term plan to achieve organizational goals. The time frame range between five to ten years or more. In the case of UII, the ultimate goal of this university is to achieve standard of excellence. But, to accomplish this goal, UII has to go through some intermediary goals, starting from collaborating, competing, and to leading. Each goal asks each own strategy. Collaborating, for example, needs action programs that make the organization having the good images so that it is possible to set up net working with other relevant organizations. Figure 2 represents goals and strategies for each period. The period has been set for 12-16 years, divided into 3 to 4 different periods of time frames.
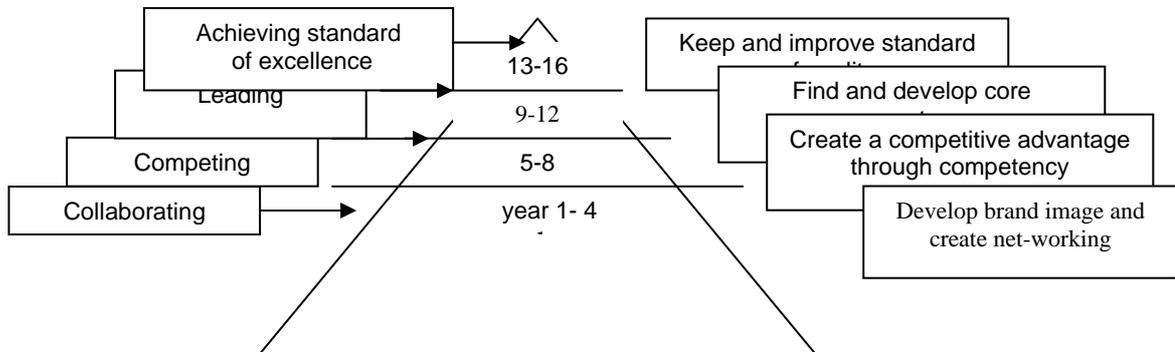
Figure 3: Business strategy

After the strategy is properly formulated, the second consequence is to design organization architecture. Based on the new business and the business strategy, the researcher conclude that the appropriate structure for higher education institution, in this case UII is process-based structure. This form of structure is totally different with the conventional one – functional structure. Under the old structure, organization usually has considerable problems in taking customer's perspective because processes that produce value for the customer cut across departments. Hierarchically, the later only report to the higher-level managers, so that the customer perspective can only be realized at that level. Meanwhile, under the new structure, the organization has the ability to overcome that problem, since processes bring customer to the fore. The process-based structure is basically cross-functional structure that de-emphasizes the functional structure.

Redesigning an organization towards a process-based structure implies that all activities, with logically belong together in order to create value for the customer, are grouped together. In this case, work activities of this university are divided horizontally based on the business process that is early entry, product creation and development and post-harvest activity. Early entry activities are basically all activities related to the effort of this university to create image so that potential students and other end users are willing to transact with this university. Product creation and development activities are activities related to knowledge creation and development, which are traditionally the responsibility of rector for academic affairs. Finally, post-harvest activities deal with how this university facilitates its alumni to enter into the society. Figure 4 outlines the basic business process of this university.
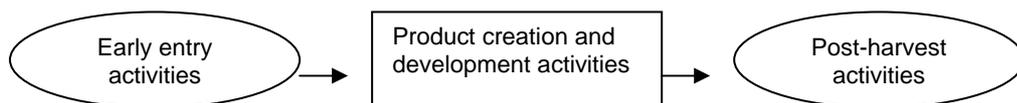

Figure 3: basic business process

In terms of power sharing, the authors propose that Head of Department, or in Indonesian case Head of Study Program is responsible for creating and developing knowledge for the

benefit of the customers (end users) (to review the role of Head of department, see for example: Smith, 2002). This means that Head of Department should be freely but with respect to the customer, produces and disseminates knowledge. Meanwhile the rest of the activities are the responsibility of UII management. In spite of different roles between the role of Head of Department and UII management, under this new structure, however, coordination between the two should be emphasized.

CONCLUSION

This paper propose that this is the time that higher education institution should reconsider its existence by shifting its paradigm particularly in responding external pressure. This case may provide insight for other instiotution of higher educations to design their own business model that fit both internal and external environment.

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IMPLEMENTING BALANCE SCORECARD IN HIGHER EDUCATION

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ABSTRACT

One of big organization's weaknesses on university context is lack of alignment between university and faculty or department. Alignment in this context is related to three elements: vision mission, strategy and performance measurement. Alignment is an important and significant issue in higher education, because commonly every faculty or department in university has vision-mission, strategy and performance measurement that are not align with university's. In implementing the three elements, a faculty or department will consume many resources. Thus, it is an irony when a faculty or department has spent effort on implementation while there is no alignment with university's elements. Balance Scorecard (BSC) was known by the business society in 1990 as strategy tools, especially in alignment. According to Indonesia's big university context, there are 20 until 50 units or departments in one university, in this situation BSC can be used as a tool to make the university more efficient and effective in implementing vision mission of organization, strategy and performance measurement on faculty, department or even supporting department strategic plan. The object of this paper is the economics faculty of one of outstanding universities in Indonesia.

Keywords: strategy, vision mission, performance measurement, resource, balance scorecard.

INTRODUCTION

There are various types of private universities established in Indonesia, especially in the last two years. Each private university concentrates on the capital area of Indonesia, such as Bandung and Surabaya. More and more Indonesian believe that higher education is a bridge to enter the job opportunity. However, it is an irony if the cost to enjoy higher education is very expensive. Ten years ago, most people believed that state university delivered the low cost, but nowadays it has changed. Study program such as medical faculty is one of faculty which is more costly than other faculties. Satryo Soemantri Brodjonegoro, General Director of Higher Education Minister, said that the increasing of cost in college could not be prevented; because it was one of higher education institution's effort to give the best quality in education. According to Badan Pusat Statistik (Indonesian statistic institution), at the end of 2006, there are 2.838 higher educations in Indonesia, consist of: 82 state universities and 2.756 private universities. Compared with the previous year's data, there were only 2.566 higher educations: 80 state universities and the rest is private university. The data shows, there is a significant growth in number of higher educations, especially among private universities in the first year, there are 270 of them in that growth number.

Changing in Education's Environment.

Data from Indonesian government shows the map of emulation in higher education institute does not merely happen between private universities, but also between state university and private university. Nowadays, state universities also race to increase their quality, especially

the ones which have good reputation in society. State university like Universities Gadjah Mada (UGM), Universitas Indonesia (UI) or Institut Teknologi Bandung (ITB) have many changes in the frame of quality. For example, since 2002 ITB had concerned on examination score discipline. If previously, students in ITB didn't have clarity about examination score – even there was a student who got score information 2 years after examination- hence since 2002, student can know their score 2 weeks after examination. Universities Gadjah Mada also make a change in education management, by founding Quality Assurance Institute in 2002, which had a mission to change teacher-centered learning paradigm into student-centered learning paradigm.

Changing in Quality of Design and Education's Management

In order to deliver the quality design to all stakeholders, higher education institutes have to consider organizational vision-mission and requirement/expectation from the stakeholders. Higher education institute should concern on both of these elements, because it is naive if they are only majoring on vision mission element regardless the requirement from stakeholders. On the other hand, it's an irony if the quality of design in higher education is based on stakeholders expectation only.

Figure 1:
Quality of Design in Higher Education

According to survey on SWA (July 2007), society chooses state university because of its quality, while private university because it's facilities. Pursuant to experience of one of the authors during 16 years in education management, both of those elements are importance. Combination between the survey of SWA' magazine and experience of one of the authors, quality and facility are two major pillars in education management. Then we will use human excellence terminology in referring to the quality and management excellence term for the facility.

Both of these elements represent significant and important matters, management excellence relates to facility and infrastructure of education, or in other words, this element always relates to physical matter. Higher education that focuses on management excellence, usually has priority on building facility, internet access, information system and computer based

laboratory. Meanwhile human excellence has three elements: academic excellence, emotional excellence and spiritual excellence. Higher education, that is developing its quality from academic excellence, defines its quality with experienced lecturers and the numbers of professors.

Higher education should not only concern in management excellence or in academic excellence. Management excellence must be developed as a base that will assist the creation of human excellence, not merely academic excellence. As a human being, students require academic excellence, emotional excellence and spiritual excellence. According to survey by SWA' magazine (one of the biggest business magazines in Indonesia) at the end of 2006, it showed that 56% of university graduates are weak in emotional excellence and 44% are weak in academic excellence. The survey showed, the weakness among university graduates, is not merely in academic excellence but also in emotional excellence. With human excellence, qualities of higher education institute will be seen in its alumnae image, such as:

- Good academic competence, which can be seen from GPA, ability to apply concept of theory which they got in university (academic excellence).
- Good self-control, spirit of assiduity and also ability to create self-motivation (emotional excellence).
- Ability to see life as a grace from God and have a passion to fill the life with positive things (spiritual excellence).

What is Balance Scorecard?

Balance Scorecard (BSC) was known by the business society in 1990. Nolan Norton Industry, which was the research section of KPMG public accountant in the USA, chaired by David P Norton, sponsored the study of measuring the future working performance of an organization. The result was published in Harvard Business Review (January-February 1992) with the title Balance Scorecard – Measures That Drive Performance In 1993, Renaissance Solution, Inc., which was David P. Norton also chaired, applied Balance Scorecard in implementing strategies in a number of business firms of his clients. Harvard Business Review (January-February 1996) also published an article entitled Balance Scorecard as A Strategic Management Systems (Mulyadi: 2001). Each perspective in BSC could not stand by itself or they are reliant to one another. As an illustration, competence of every people in organization will not be useful if each individual does not work along with others. It is true that specialization is needed from each individual, but it does not mean that every individual has independence in working. This figure depicts how each perspective in BSC is interdependent among one another, especially the first three perspectives (customer perspective, internal business process perspective and learning and growth perspective), which are the factors that support financial perspective. It means that organizational effort to increase performance in customer perspective, internal business process perspective and learning and growth perspective will assist the make-up of performance in financial perspective.

Figure 2: Perspective in Balance Scorecard (Kaplan: 2004)
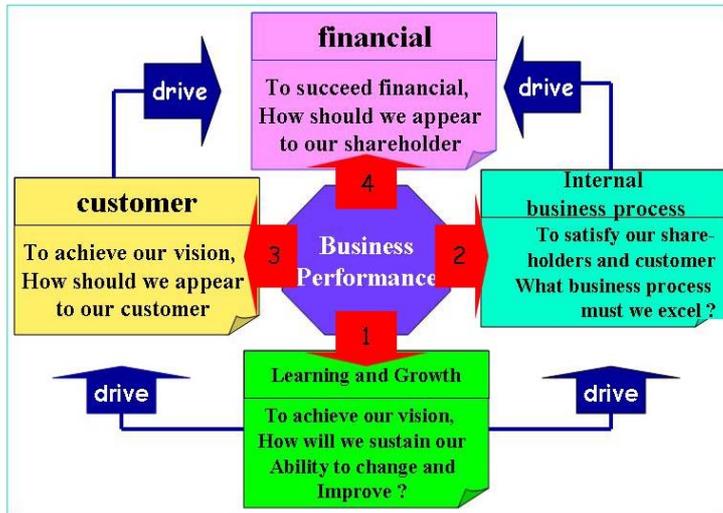
Financial perspective will not be discussed in this paper, because in fact, financial perspective is determined by three other perspectives. Figure 3 depicts how each perspective in Balance Scorecard is adopted into higher education context.

Figure 3:
BSC' perspective in Higher Education
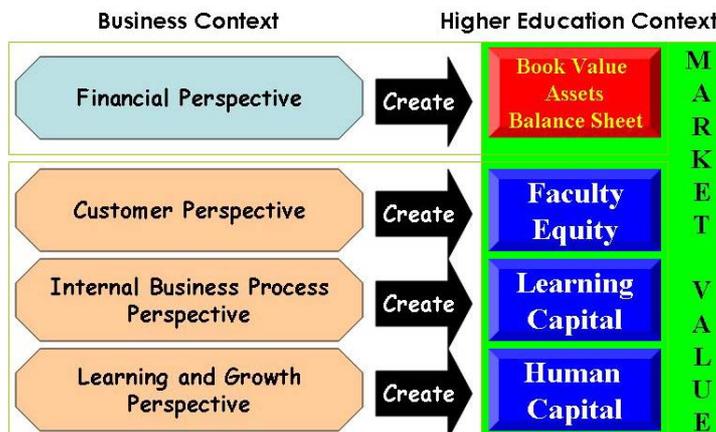
There is a change in perspective terminologies when using BSC in higher education. In higher education context, learning and growth change into human capital, perspective of internal business process changes into learning capital. Finally, customer perspective in higher education institute turns into faculty equity perspective.

Strategy Formation of Faculty of Economics

Nowadays there are many overseas universities and domestic universities which are founded by groups of businessman, social organizations, even, publishers. Those universities are set

up to facilitate the needs of each group to capture greater market. Moreover, the government's policy related to globalization destroys any barriers between nations and narrows the chances for local universities to compete in the market. The existence of Departments or Faculty brings more complex macro situation in which the local universities have to face. Therefore, the environment of Departments or Faculty does not only need qualified lecturers, building facilities, advanced library but also strong alignment between university and faculty or department. Alignment in this context is related to three elements: vision mission, strategy and performance measurement. Alignment is important and significant issue in higher education, because commonly every faculty or departments in university has vision mission, strategy and performance measurement that are not aligned with universities. This fact will result in inefficiency and ineffectiveness, because in every of these elements that faculty or department will implement consume many resources. From this point, we can see the significance of implementing Balance Scorecard in fact not merely in business world, namely organizations which is profit oriented. Balance Scorecard also becomes requirement of non-profit' organization such as higher education institute. This matter caused emulation also occurred between higher education institutes. Therefore with limitation of economic resources, higher education institute has to align the usage of existing economic resource in organization and organization' vision-mission.

Beside that university also needs strong networking with the industry around the campus both in the regional and national scopes. Cooperation with overseas universities in order to sharpen curriculum, learning process and lectures' quality development is necessary to be done, without neglecting the industry linkages, such as professional organization and business association. Through industry linkages, university can survive, and also share its competitive value, which is based on the vision toward the business community. This can be accomplished through alumnae profile or opportunity share.

The standardization of curriculum, the speed of accessing science and technology, and also the use of technology in learning process have created another new problem for every faculty that wants to be distinctive. This condition happens because almost all faculties are developing their institution based on those factors. In this case, human skill is the basic ability to gain success in managing working environment. The skills include leadership, self-objectivity, analytical thinking, behavioural flexibility, oral and written communication, personal impact, resistance to stress and tolerance for uncertainty, (Schermerhorn: 1996). Human skill is an important factor for the alumnae to pursue their career in the real working environment. Student organization that has become the media for students to express themselves and practice their managerial skill should be the partner of the faculty to improve the human skill of the students.

In this paper we refer to the Vision and Mission of the University. If we have the core belief about Vision, it will help all members of the faculty to accomplish it. The SWOT analysis and the Strategic Planning are focusing on caring and global in all aspects of entrance, advantages, Information Technology and environment. They are also used as the base to change the strategy into programs or activities. Strategy is a way that the management uses to realize vision of an organization through its mission. The strategies in developing an organization must be a set of system called Strategic Management System. In this system the management and the staff determine the route/course that will be taken to reach the vision of the organization (Mulyadi and Johny: 1999). Considering those aspects, we have chosen the strategies to develop the Faculty of Economics in the future. Those strategies are:
1. Improving the quality of product (in terms of science) and learning process
2. Improving the productivity and quality of the lecturers, staffs and students
3. Improving the cooperation with overseas universities, professional organization and industry

4.   Empowering the students organization to be able to produce the academic and human skill of the students

Faculty Equity Perspective

Faculty equity focuses in faculty of economics as a whole. Stakeholders do not only get the benefit from education product of faculty of economics, but also from service, trust and various other factors. Faculty equity represents the strategy of combination and integration of brand product into faculty of economics culture. This will increase trust and faithfulness of stakeholders to faculty of economics. Faculty equity development can be done with good relation with students, industrial and profession world. Building good relation with those three components above, will build the image of economics faculty.

Learning capital Perspective

This perspective in fact alighted from "the generic value chain" developed by Michael Porter, where "the generic value chain" consists of three phases, namely: *(1) innovation process; (2) operation process; and (3) post graduates process.*

Figure 4:
The Generic Value Chain
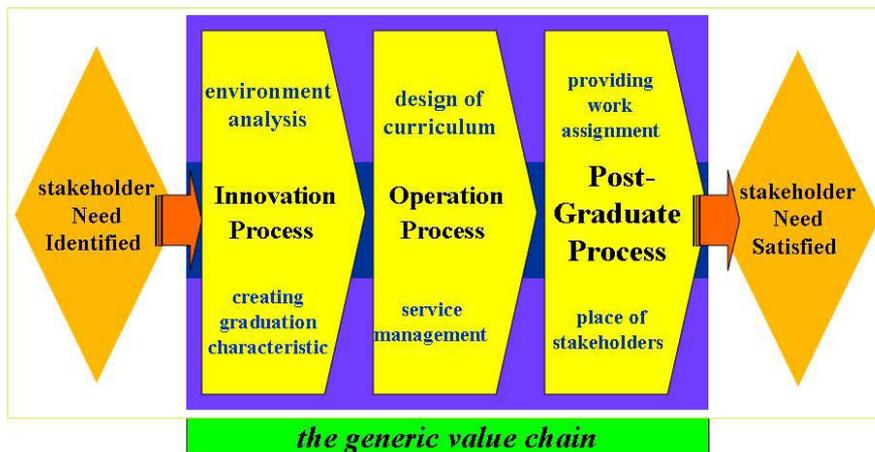
The three phases in "the generic value chain" is started with environmental analysis, so that the curriculum compiled by faculty of economics is based on issue and business practice. This last step is providing work assignment to alumnae. After human capital, learning capital is the second capital that is used by faculty of economics in serving its stakeholders. Through learning capital, all human capability and human commitment conscripted and focused to yield best value to student to get adequate financial returns.

Human Capital Perspective
This perspective started from people, in this case are the students, lecturers and managerial personnel. Component of capital human consists of human capability and human commitment. To be able to compete in environment, faculty of economics has to build people with human capability and human commitment that fit faculty requirement.

Figure 5:
Human Capital Perspective
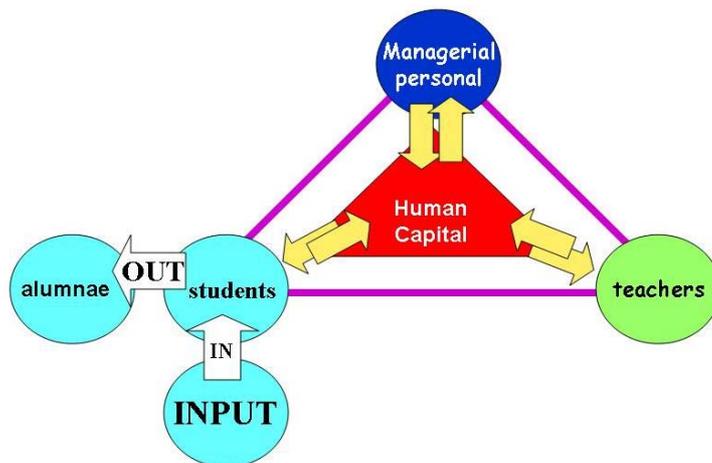
Balance Scorecard Model in Higher Education

In the frame of Balance Scorecard, the strategic objectives are formulized in 4 perspectives, which are financial perspectives, customer perspective, process perspectives, learning and growing perspectives. Thus, we set the standard of measurement (performer driver) based on this following principle: **"**If we can't measure it, we can't manage it**-**If we can't manage it, we can't achieve it". In fact, Balance Scorecard could be used in measurement context, although in the first time, this tool was used as a tool for performance measurement in all executive company in America. Hereinafter, Balance Scorecard used in three aspects, namely: (1) a tool to translate organizational vision mission; (2) appliance translate organizational strategy; (3) performance measurement for individual and organization. This matter that motivates us to write down in abstraction above that Balance Scorecard can be used to assist university in aligning vision mission, strategy and performance measurement with faculty or department.

Figure 6:
BSC in Strategic Planning

The picture below shows strategic objective, which faculty of economics has. The picture shows, how the concept of Balance Scorecard in higher education is combined with two pillars in institute higher education, management excellence and human excellence. Those 19 strategic objectives are derived from the matrix of human and management excellence with three BSC perspectives. The matrix between human excellence and BSC perspectives produces 12 strategic objectives. Meanwhile, the matrix of management excellence and BSC perspectives produces 7 strategic objectives.

Figure 7:
Strategic Objective of Economics Faculty
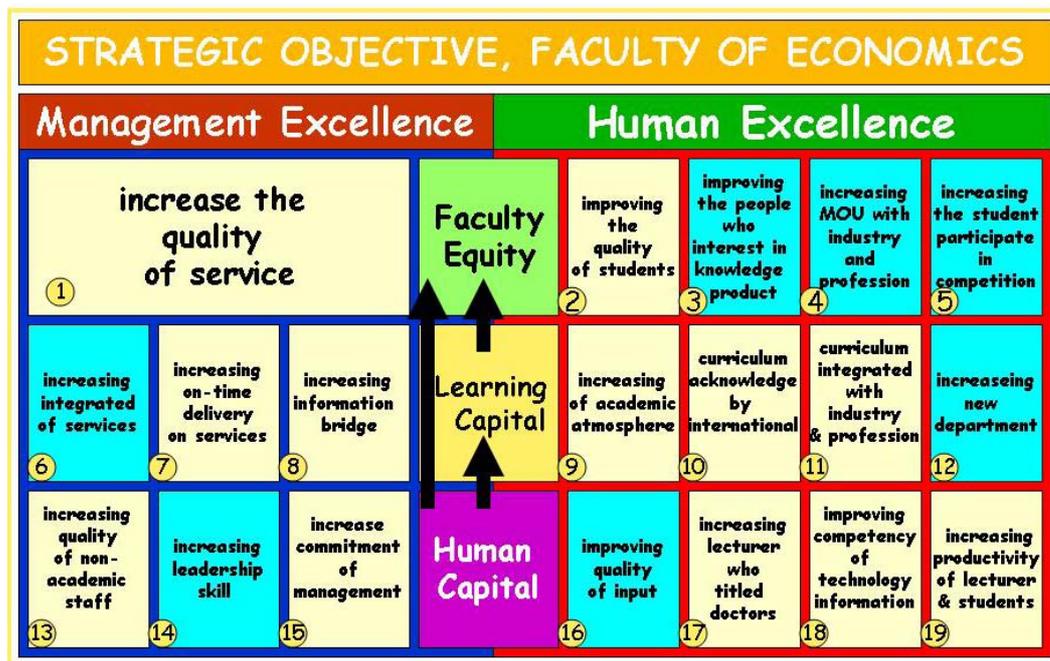
Mindset as Catalyst in BSC's Implementation
In this changing environment, organizations also have to change the employees' mindset. Mindset can be interpreted as coherent software that sticks in every people in organization. Every organization must know how to translate the vision into individual mindset in every organizational employee. Mindset is divided into three elements, which are (Mulyadi & Johny):

- Core Value: an attitude, nature of, and character which is hold high by employees when they are working in organization
- Belief: a confidence and trust that employees have when they are working in organization
- Paradigm: the way employees approach to business.

Mindset and human being can be illustrated as ice mountain phenomenon. The behavior looks like ice mountain, which is in fact the behavior caused by coherent software in human being itself, name mindset. Some types of mindset in organization are customer value mindset, continuous improvement mindset, opportunity mindset, cross functional mindset and employee empowerment mindset. This mindset subject is used to accommodate the changing in faculty of economics.

Figure 8: Mindset as Catalyst BSC' Implementation (Adapted from Mulyadi & Johny: 1999)
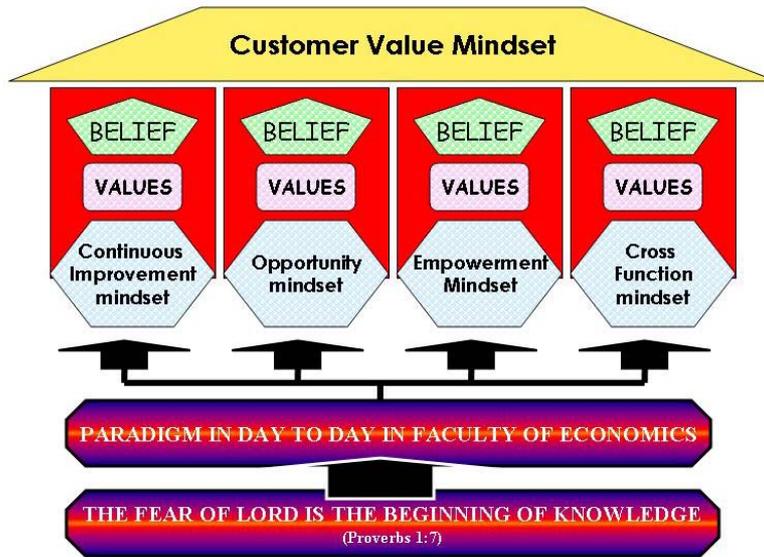
CONCLUSION

The theoretical frame work in that Balance Scorecard' perspectives is started with the knowledge perspective and growth stresses on the quality improvement of students, lecturers, and staff through both formal and non formal education. That will produce the quality of the learning process and the process to produce product knowledge and to enlarge the number of knowledge users which is conducted by considering the cost efficiency and effectiveness. The improvement of product knowledge users through formal education (S1, S2), research, consultation and continuing education in business will multiply the Faculty of Economics' financial perspective.

In Faculty Equity perspectives, it highly needs the support from the university's roles in providing:
1. Facilities of Academics Information Technology, students, and finance
2. The mechanism of organization between supporting units and Faculty
3. The balance movement between faculty and each department
4. Reward system which leads to a better performance

Regarding the Information Technology, we do hope the result from the work of Accounting Information Systems (AIS) team; can assist us in order to implement managerial activities. Matrix organization that has become a place in doing the organization at Petra should be able to firm the authority and responsibility so that it can create a synergy.

By having the strategic planning we convey, we propose to re-active the role of 2^{nd} vice dean. Our suggestion is based on the strategies that affect Faculty's activities. The descriptions of the activities are matched to the 4 perspectives:
1. 1^{st} vice dean has the authority and responsibility towards the perspective of faculty equity.
2. 2^{nd} vice dean has the authority and perspective in improving the academics quality and students' human skills through learning capital perspective.
3. 3^{rd} vice dean has the authority of human capital which relates to the lecturers and staff.
The head of program has an authority and responsibility in the quality of the learning and teaching process and the process which produces product knowledge and growth perspective and special learning that relates to the lecturers and staff

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UNIVERSITY LECTURERS' PERCEPTIONS OF AN INNOVATIVE INSTRUCTIONAL ELEMENT:TOWARDS SELF-SUFFICIENCY AND SUSTAINABILITY

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ABSTRACT

Resources in higher education institutions, particularly the faculty members, need to keep up with the progress of modern society and its increasing demands. To be self-sufficient and sustainable in the changing world, higher education institutions should have their academic staff constantly upgrade themselves in the subjects they teach as well as in the instructional strategies. Idrus (2006) and many others have suggested that students improve their learning approach from rote-learning to active engagement. In order to bring about this transformation, the role of instructors is pivotal. Instructors need to initiate the change in student learning by improving their teaching strategies. To do this, instructors ought to be open-minded and willing to explore new approaches. It is the focus of this paper to investigate how instructors in higher education institutions perceive the implementation of an innovative element in instruction. Data were collected from responses to a questionnaire distributed to two sample groups of lecturers in Malaysia and New Zealand. The instructional element was a web-based courseware called Moodle (Malaysia) and WebCT (New Zealand). The two groups of lecturers showed the same degree to which they used the system but perceived it at different extent to which the system was beneficial to their teaching. These findings are utilised to inform suggestions for lecturers to improve their skill and knowledge in pedagogy.

INTRODUCTION

Higher education institutions are a complex system with many interacting components. One of these components is the faculty member or academic staff or lecturer. There is no doubt that lecturers play the most important role in improving instruction (Lagowski, 1993; McIntosh, 1996/1997; Van Driel, Beijaard, & Verloop, 2001). Yet, many lecturers adhere to traditional instruction despite increasing pressure to allow greater student participation in the learning process. Technology, which sometimes constitutes as a component in innovative teaching technique, is often perceived as replacing their roles and diminishing their jobs (Utley, 1997).

The explosive growth of innovations and advanced technologies in education presents unlimited potential for enhancing instructions; nevertheless most lecturers still prefer to continue teaching in traditional fashion using teacher-focused approach (Jonassen, et al., 1995). Maor (2004) believes that teaching conceptions held by the lecturers may provide the explanation to this phenomenon. While many studies reported the implementation of teaching approaches using technology or other innovative ideas, very few focused on the lecturers' roles, motivations and perceptions (Beaudoin, 1990; Dillon & Walsh, 1992). As pedagogical beliefs and knowledge play a crucial role in any educational change (Fullan, 2001), probing

the lecturers' perceptions on their own teaching is an important first step toward a successful improvement in instruction.

It is the focus of this paper to investigate how lecturers perceive the implementation of an innovative element in instruction which is a web-based courseware called Moodle and WebCT. The latter was recently taken over by Blackboard Inc., but in this paper we use the term WebCT which label we are familiar with since its first use in 2003. Both Moodle and Blackboard are winners of The eLearning Guild Member's Choice Awards for Learning Management Systems (LMS) 2007 in market share and satisfaction categories (eLearning Guild, 2007). The report was concluded from data analysis based on interviews with key industry executives and commentary from key industry leaders, involving 930 e-Learning professionals representing 840 different organizations.

Instructional changes

University lecturers, who are mostly researchers, strive to keep abreast with changes and development in their disciplines. When it comes to teaching, however, many seem oblivious to education research findings and the suggestion to do something with their own teaching. Many still embrace the idea that teaching is knowledge transmission from the instructor to the students. The focus is on the certain amount of subject knowledge to cover instead of the depth of understanding students should achieve. The typical introductory classrooms with large number of students and sheer amount of curriculum materials reinforce the belief that lecturing is the only feasible method of teaching. Time and energy required to improve a course can be in conflict with those for other professional duties especially research. The superior prestige of research of teaching is still prevalent in the culture of many higher education institutions. Reformers view this culture as a significant impediment to encourage lecturers to seriously think about their teaching.

A significant educational change is achieved if there are simultaneous changes in beliefs or knowledge underlying teaching practice, instructional materials, and teaching approaches (Fullan, 2001). The conceptions or belief orientations are categorized in many different ways, but these can be arranged on a continuum from "information presentation" to "learning facilitation" (Dall'Alba, 1991; Martin & Balla, 1991; Samuelowicz & Bain, 1992, 2001; Martin & Ramsden, 1992; Kember & Gow, 1994; Trigwell & Prosser, 1996).

Conceptions of teaching are identified to affect approaches to teaching (Trigwell & Prosser, 1996). Lecturers who perceive teaching as transmitting information to students approach their instruction in terms of teacher-focused strategy. Likewise, lecturers who view teaching as helping students to develop and change their conceptions are likely to adopt student-focused strategy for their instruction. Teaching approaches adopted by the lecturers, in turn, influences learning strategies used by their students (Kember & Gow, 1994). Departments oriented towards knowledge transmission motivate students to learn using surface approaches, whereas departments where learning facilitation predominate encourage meaningful learning strategies.

Educational reform efforts necessitate the conception shift from teaching as a transfer of knowledge to teaching as a facilitator of learning. Instructors need to transform the learning process from rote learning to focusing on understanding by facilitating student engagement (Idrus, 2006). Lecturers who hold the view of their role as the knowledge transmitter are less likely to implement significant teaching modification in their courses even after they participate in a professional development program (Sunal, et al., 2001). Lecturers who determine to adopt innovative teaching approaches often have trouble in letting go of their old

conception of teaching especially when they feel time is pressing to cover the material (Henderson, 2005; Fedock, Zambo, & Cobern, 1996).

Besides the three components of change proposed by Fullan (2001), there are some conditions that need serious consideration in promoting a successful change (Ely, 1990). These include dissatisfaction with the present condition, knowledgeable personnel, accessible resources, time, rewards, participation and supportive leaders. Lecturers, undoubtedly, play a pivotal role in the adoption and implementation of new technologies in their instructions.

Attitudes towards instructional technology

Following the explosion of information technology in almost all areas of modern society, the rate of technology adoption in higher education has increased (Green, 1996). One type of information technology in instruction is the web-based courseware that can be integrated in the traditional face-to-face instruction. It is known as hybrid system or mixed delivery approach which has been reported to give some benefits for students and lecturers (Black, 2001; Brakels, et al., 2002). The web-based courseware comes in a variety of brand names such as eCollege, Blackboard, Moodle and WebCT. The systems share some common features which essentially provide custom-made online resources for a particular course. These features can be categorised according to the functions they serve:
- information display, where course documents, lecture hand-outs and other information are presented and organised;
- assessment, where surveys, tests, quizzes or assignments are generated to assess students' understanding;
- discussion, where threaded discussions, bulletin boards, chat rooms can be used to promote interaction among the course participants, including the lecturer and teaching assistants, outside class hours;
- course management, where notices are posted, assignments are collected and returned, grades are entered, etc.

Lecturers' attitudes on instructional technology affect the implementation of technology and consequently impact the student learning. White and Myers (2001) find that incorporating WebCT into the traditional instruction makes communication and material distribution more effective although it requires a lot of time to learn the program, train the students, prepare the course material, and look after the online content. Lecturers also think that online technologies improve the breadth and availability of course material, reduce the use of paper, promote student discussion and collaboration, as well as enable instructional flexibility (Maor, 2006; Willet, 2002). Another study involving 862 lecturers from 38 institutions reveals some interesting findings (Woods, Baker, & Hopper, 2004). The dominant usage of Blackboard was to present course syllabi and reading material. Eighty-one percent of the lecturers mentioned that they often sent email to their class. There were less than 5% reported using interactive features such as virtual office hours, live chat or student web pages. More than 50% responded they never used Blackboard to administer quizzes, collect and return assignment, and elicit student opinions. In other words, the lecturers surveyed did not seem to make the use of many educational features of Blackboard to the fullest. Nevertheless, more than 60% felt the benefits of certain Blackboard features in helping them with the traditional face-to-face instructions. There were significant differences in usage and attitudes from different course subjects but no definite patterns were identified.

Most of the studies looking at the lecturers' perceptions of instructional technology were conducted in the US, Europe or Australia. It is, therefore, informative to investigate the lecturers' perceptions of the web-based courseware in institutions in other countries where the technology just recently made its way into the teaching and learning environment.

RESEARCH QUESTIONS

The elaboration above suggests that the lecturers play a significant role in transforming the instruction to better facilitate student learning. The web-based courseware is an element of innovative teaching approach which could provide the lecturers with pedagogical tools to create conducive learning environment for their students. Lecturers' perceptions of this innovation influence the successful implementation of the innovation in the classroom. The ways the lecturers use the innovation offer some insight into their teaching conceptions and beliefs, as well as the institutional conditions under which they are working. From this information, we can put forward suggestions on how to motivate lecturers to be willingly involved in implementing teaching innovation and to improve their own instruction.

The research questions we would like to answer are:

1. What are the dominant features of web-based courseware used by the lecturers?
2. How do the lecturers perceive the benefits and problems in using the system?
3. What is the impact of the system on their instruction?

Because of the two different groups involved in this study, we add the following question to look at the comparison between them:

4. What are the differences and similarities in the perceptions of two groups of lecturers from different countries?

METHODOLOGY

There were two groups of lecturers participating in this study: a group of ten physics lecturers from a New Zealand university and a group of twelve cognitive science lecturers from a Malaysian university. Only lecturers who had been using the web-based courseware were approached to participate. The departments where the lecturers come from have been using one type of web-based courseware: WebCT in New Zealand and Moodle in Malaysia. The choice of the departments corresponds with those to which the authors are connected. This was intended to facilitate the analysis of the study outcome by utilising the subject knowledge that the authors are familiar with. The physics lecturers from the New Zealand university have been using WebCT ranging from four years to less than a year. On the other hand, Moodle has been introduced in the Malaysian university for just over a year. Prior to this, the Malaysian lecturers used a courseware with similar features in carrying out e-learning. These Malaysian lecturers had used the courseware ranging from two to three years. There were various types of assistance and training that the lecturers had before or during the use of the system. Self training, attending workshops and help from colleagues were some of the ways.

A questionnaire was sent via email to the cognitive science lecturers and in person to the physics lecturers. Anonymity was encouraged however some lecturers revealed their identity in the returned questionnaire. The questions asked the lecturers to indicate the features of WebCT or Moodle they used in their courses. They were also asked to rate along a five-point Likert scale (1 = Strongly Disagree and 5 = Strongly Agree, or 1 = Never and 5 = Always) their perceptions of the benefits and problems they experienced with WebCT or Moodle. In addition, there was an open question asking the impact of the system on the lecturers' instruction in various areas.

The responses from the questionnaire were analysed qualitatively. Similar responses were grouped in the same categories to find the number of counts. Responses to open questions

were examined to identify some common themes. Statistical analysis was made to find the average and variation of the ratings and the differences between the two groups.

RESULTS

Table 1. Features of WebCT or Moodle used by the lecturers

Features	Number (percentage) of lecturers		
	WebCT	Moodle	Total
Information display:			
Course outlines or syllabus	10(100%)	12(100%)	22(100%)
Slides or lecture notes	9(90%)	12(100%)	21(95%)
Supplemental reading materials	5(50%)	10(83%)	15(68%)
Links to useful websites	3(30%)	8(67%)	11(50%)
Interactive simulations	2(20%)	3(25%)	6(27%)
Others	2(20%)	5(42%)	7(32%)
Assessment:			
Online quizzes	6(60%)	4(33%)	10(45%)
Assignments	4(40%)	6(50%)	10(45%)
Surveys	1(10%)	4(33%)	5(23%)
Tests	1(10%)	1(8%)	2(9%)
Discussion:			
Threaded discussions	2(20%)	10(83%)	12(55%)
Bulletin boards	1(10%)	1(8%)	2(9%)
Chat rooms	0	3(25%)	3(14%)
Course management:			
Sending notice or emails to students	2(20%)	10(83%)	12(55%)
Collecting and returning assignments	5(50%)	5(42%)	10(45%)
Entering grades (done by tutors)	1(10%)	2(18%)	3(14%)

Table 1 presents the features of WebCT or Moodle that the lecturers used in their courses. The lecturers in both institutions appear to use certain features of the web-based courseware to a similar extent. The dominant information display usage of the system was for presenting course outlines or syllabus, slides or lecture notes and supplemental reading materials. Interactive simulations and other features were used only by a few lecturers. For assessment purposes, online quizzes were more commonly utilised by the physics lecturers with WebCT than by the cognitive science lecturers with Moodle. The latter, however, communicated more with the students using threaded discussions and emails. Overall, the most common usage of the system was for course document and resource presentation.

Table 2. Lecturers' perceptions of the benefits provided by WebCT or Moodle
(1 = Strongly Disagree to 5 = Strongly Agree)

Benefits	WebCT		Moodle	
	Mean(sd)	Agreement	Mean(sd)	Agreement
It helps to more clearly communicate information about course outlines and	3.80(0.42)	80%	4.25(0.62)	92%
requirements	2.70(1.16)	30%	3.58(0.90)	67%
It enhances face-to-face presentations in the class	3.89(1.17)	70%	3.75(0.75)	75%
It delivers a form of assessment which is relatively easy to set up and to grade	3.40(1.17)	60%	3.17(0.94)	33%
It encourages students to spend more study	3.56(1.01)	60%	3.33(0.98)	50%
time in addition to attending the lectures and tutorials	3.20(0.92)	30%	3.75(0.62)	67%

It assesses the student's level of understanding				
It increases the student motivation				

Table 2 shows the lecturers' views of the benefits they perceived in using WebCT or Moodle. The agreement is obtained by adding the number of lecturers responding "agree" or "strongly agree" with the statement. The lecturers expressed similar views concerning some advantages that the web-based coursewares provided in their courses. Most of them perceived that the system facilitated teaching and learning to a similar extent. Two-tailed *t*-test analysis was conducted to determine whether there are differences in these views. In some areas such as communicating the course outlines [$t(20) = 1.94$, $p < 0.10$] and improving in-class presentations [$t(20) = 2.01$, $p < 0.10$], the cognitive science lecturers seem to have higher appreciation than do the physics lecturers. However, these differences are not significant at confidence level of 99%.

Table 3. Lecturers' perceptions of the problems in using WebCT or Moodle
(1 = Never to 5 = Always)

Problems	WebCT		Moodle	
	Mean(sd)	Agreement	Mean(sd)	Agreement
Skills in using the system	3.10(0.99)	40%	3.16(0.94)	50%
Increasing workload	3.30(0.82)	50%	4.00(1.21)	67%
Technical problems	2.90(1.37)	40%	3.75(0.62)	67%
Students' difficulties with access, computer glitch, etc.	3.20(1.23)	50%	4.00(0.85)	67%

The problems experienced by the lecturers while using WebCT or Moodle are presented in Table 3. Figures in the "Agreement" column are the percentage of the lecturers answering "often" and "always" to the question statement. Both groups of lecturers encountered, in similar frequency, some problems such as the skills in using the system and increasing workload. Two-tailed *t*-test analysis was conducted to determine whether there are differences in these perceptions. It appears that the technical problems [$t(20) = 1.93$, $p < 0.10$] and students' difficulties with the system [$t(20) = 1.80$, $p < 0.10$] were experienced more frequently by the cognitive science lecturers using Moodle than by the physics lecturers using WebCT. The two previously mentioned problems have more to do with the hardware and supporting infrastructure provided by the institutions, rather than with the lecturers themselves. Those differences nevertheless are not statistically significant at level of confidence 99%.

Table 4. Effects of WebCT or Moodle to teaching

Aspects of teaching	WebCT		Moodle	
	Positive comments	Neutral comments	Positive comments	Neutral comments
Lesson preparation	1 (e.g. make it easier for the students to download before lecture)	5 (e.g. not really at all)	5 (e.g. more room for recognizing students' problems, helps in the distribution of lecture notes, more efficient as I keep my notes	3 (e.g. as usual, none as it is used to as supplementary to students' learning, have to dedicate time to check online material)

			for next year)	
Lecture presentation	3 (e.g. can show more interactive animation, details can be ignored and put on the web, can refer students to WebCT page)	3 (e.g. no effect)	5 (e.g. students can access to course notes, visit e-learning forum, print own notes and bring to class, students' understanding is very good)	2 (e.g. doesn't really help, none as I don't like to show students what they are going to do in class)
Assessment preparation	7 (e.g. I try to link the lessons objectives and online quizzes, it's easy to review the courses, it's good to have the quizzes)	1 (e.g. Not affected very much currently)	4 (e.g. can ask students to be involved and give comments on previous lessons, update students online, faster, provide extra quizzes and help)	1 (e.g. only give out assessment questions online but students still need to submit the hardcopy)
Overall teaching experiences	6 (e.g. WebCT helps to link different teaching components, easier communication with students, useful as a central clearing house for course material, quizzes as feedback)	1 (e.g. minimal effect – convenient for students, does not enhance the teaching outcome)	5 (e.g. students can access the notes from everywhere, ease the burden of distributing notes, provides the flexibility of meeting students online, makes teaching more efficient)	2 (e.g. more work, good but need time to prepare as well as maintain materials and system)

The lecturers' responses to an open question "How does the WebCT or Moodle affect your teaching practice?" are displayed in Table 4. Approximately half of the lecturers felt that the system influenced their instruction in a positive way. In preparing and presenting the lessons, very few physics lecturers perceived that WebCT was useful while most of them did not experience any effect of WebCT. There were five cognitive science lecturers who responded that Moodle made it more convenient for them to prepare the lecture and for the students to get the lecture material. For the assessment purposes, the physics lecturers mostly appreciated the online quizzes which contributed to the assessment scheme of all first year courses. On the other hand, the few comments put forward by the cognitive science teachers indicate that the assessment features of Moodle did not significantly have any impact on their instruction. For the overall teaching experiences, WebCT and Moodle appear to affect only very few lecturers from both groups. Apart from the capability of the system in storing and retrieving the course material as well as providing a flexible communication tool, there was no other prominent influence of the system to the lecturers' teaching practice.

DISCUSSION

The dominant use of either WebCT or Moodle was to make information available for the students. This information could be course syllabus (used by 100% of the lecturers), lecture notes (95%) or other reading resources (68%). The next major utilisation of WebCT or Moodle was to post discussions, send emails or notice to the students. Less than one-third of the lecturers took advantage of some more interactive features of the system such as interactive simulation and chat room. This pattern is consistent with other study done in the US (Woods, Baker, & Hopper, 2004). There are several reasons which may explain this behaviour. The participant lecturers may hold the conception that teaching is information presentation. This conjecture will be corroborated by analysing the responses to other questions in the survey. The increased workload expressed by some lecturers may avert them to explore other features of the system which could be potentially useful and try them out in their teaching. The satisfaction with many aspects of traditional teaching approach may also contribute to the insubstantial use of WebCT or Moodle features which cause deviation from the old practice.

The lecturers' perceptions of the benefits of WebCT or Moodle confirm their preference of the system features to use. The system capability to store and display information was favoured by most of the lecturers in this study. The online assessment was also viewed to be useful because it saved time to set up and to grade particularly if a test-bank was available. The lecturers using Moodle showed rather greater appreciation of its benefit in conveying the course information and enhancing lecture presentation than did the physics lecturers. This may be explained by the fact that the physics lecturers continued to distribute the lecture information in paper form and present the lecture in PowerPoint or OHP slides, the practice of which had already existed before WebCT was utilised in the department. Other benefits of WebCT or Moodle, such as assessing student understanding, increasing student motivation and encouraging students to spend more study time outside lecture hours, were not rated as highly as the benefits associated with information delivery and availability.

This finding is consistent with a recent study on technology enhancements of traditional instruction in Malaysia. The participating lecturers recognized the advantages of new technologies, but they were reluctant to reduce their control over the teaching practice (Burgess, Currie, & Maor, 2004). This may also indicate the "information transmission" conception of teaching still embraced by the participating lecturers. Conceptions of teaching influence the lecturers' teaching approaches (Trigwell & Prosser, 1996), including the way they used WebCT or Moodle. The lecturers' perceptions that WebCT or Moodle was not very useful in terms of improving student learning could be tracked down to their usage of the system which was essentially teacher-focused.

Concerning the problems perceived by the lecturers, it very much depends on the institutions that provide supports in terms of the training to familiarize with the system, time needed to go through the whole process from preparation to evaluation, technical assistants, infrastructure resources and endorsement from managers. Ely (1990) suggest the importance of these aspects in ensuring the success of a change. The lack of institutional supports leads to the lecturers' day-to-day problems such as skills, increasing workload and technical problems. The physics lecturers appeared to experience those problems less frequently than did the cognitive science lecturers, especially because there was a personnel in the physics department available to assist with any technical matters. In addition, the physics lecturers seemed to be "less creative" in exploiting the WebCT in terms of the variety of the features they used compared to the cognitive science lecturers using Moodle. This results in fewer problems encountered by the physics lecturers than those encountered by the cognitive science lecturers. However, the statistical analysis does not suggest that these differences are significant. Therefore, the lecturers in both groups can be concluded to experience the problems in a similar degree.

Not all lecturers wrote comments on the effects of WebCT or Moodle to their instruction. Most of these comments were about the benefits or the problems associated with the system, rather than how the teaching practice changed because of using the system. The responses from the physics lecturers focused on the utility of WebCT as information depository system which arguably facilitates their effort to provide course material for the students. All physics lecturers who taught first year courses found it convenient to have online quizzes which were graded by WebCT. However, the quizzes did not appear to have any influence on their day-to-day practice or exam construction. The cognitive science lecturers, in the same way, emphasized the capability of Moodle in holding and retrieving information. They viewed this function as beneficial especially for the students. The lecturers from both groups perceived the importance of information transmission. The perception may originate from the traditional teaching practice they are accustomed to. This view, again, reinforces the speculation previously proposed, that the participating lecturers embraced the conception of teaching as information presentation.

CONCLUSION

This paper explores the usage of a web-based courseware by two groups of lecturers. More specifically, the investigation addresses which features of the system that the lecturers utilised, the advantages and problems that the lecturers encountered while using the system, the impact of the system on their instruction, and the similarities and differences of these perceptions found between the two groups.

From the responses to a questionnaire, the lecturers used WebCT or Moodle mainly for posting course material (syllabus, handouts, readings), followed by sending emails to students and setting up online quizzes. The lecturers hardly ever utilised the system to promote active involvement and collaborative learning amongst their students, as well as getting feedback from students to assess their teaching. These constructivist aspects of instruction can be achieved through WebCT or Moodle; all the lecturers need to have is the teaching conception associated with those aspects. It could be inferred that the lecturers involved in this study still hold the conception of teaching where teaching is viewed as imparting knowledge to the students. While thirteen out of a total of twenty-two lecturers received training from IT department prior to using the system, the technical knowledge is clearly not a sufficient ingredient to change the teaching conception.

The relatively small sample size involved in this study prevents the results from being able to be generalised across all lecturers using web-based courseware. The lecturers were from only two departments in two institutions. Lecturers in other departments may hold different attitudes and utilise the system in a different manner. The findings in this study, nevertheless, are in line with others done in the United States (White and Myers, 2001; Willet, 2002; Woods, Baker, & Hopper, 2004) and Australia (Maor, 2006) in terms of the prominent usage of the system and the benefits perceived by the lecturers.

Returning to the title of this paper, we argue that identifying lecturers' perceptions on innovative instructional elements is the key towards self-sufficiency and sustainability in higher education. When lecturers still embrace a conception of teaching as knowledge transmission, the outcomes of teaching practice utilising technology will not be optimum in terms of student's increased understanding. Technologies, which can enhance instruction by facilitating student learning, should be implemented with the corresponding beliefs and knowledge on pedagogy. The prerequisites to changing pedagogical beliefs are dissatisfaction with the current practice, familiarity with literature on education research and institutional supports. Without these conditions and efforts, it is difficult to envisage instruction being

improved from the traditional style into an environment where students actively construct their knowledge and use it for their benefits in the future. This is definitely the major contribution of higher education institutions in modern society.

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BEYOND QUALITY – TOWARDS KINETICS AND BLUE OCEAN MANAGEMENT IN HIGHER EDUCATION

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ABSTRACT

Quality Management Systems in Higher Education institutions around the world are now increasingly becoming commonplace. The move from standard-based audits, using say the ISO 9000 series of standards, to fitness-for-use-based audits is beginning to take place in a number of countries. Some countries that started somewhat later than others, may still be conducting standard-based audits but they too are rapidly re-tooling and re-arranging their SOPs to move towards fitness-for-use-based audits. This paper reports on a number of investigations of management development generally and the potential application of the latest management philosophies to higher education specifically. The latter includes Kinetics Organization and the Blue Ocean Strategy.

This paper shows that higher education institutions are lagging behind industries in applying new management philosophies. This results in poor alignment between graduates' skills and industry requirements. Given the very rapid and pervasive expansion and application of technology, it is inevitable that higher education institutions seriously consider the adoption and adaptation of these new management philosophies. After all, the human capital of a country is pivotal to prosperity and economic survival of the country and the business of higher education institutions is indeed to provide relevant, up-to-date skilled and knowledgeable human capital.

The paper concludes with recommendations on applying these management philosophies to the various aspects of higher education and higher education institutions.

INTRODUCTION

Management or organizational development theories had continually grown in numbers to the extent that laypeople are easily confused as to the efficacies of the various exhortations by management and organizational experts. Many books and articles have been written by management academics as well as ex-practitioner CEOs [Covey, 1990; Welch, 2005; to mention just a couple]. Each of these theories is normally accompanied by a series of supporting evidence that would appear formidable until another theory again accompanied by equally formidable supporting evidence supersedes it. A classic case is the highly acclaimed book by Waterman and Peters entitled *In Search of Excellence* published in 1983 in which 48 US companies were discussed and considered to be excellent by the authors based on a number of criteria. Some nine years later more than half of these excellent companies had either disappeared or relegated to a much lesser status.

One could conclude, true to the adage oftentimes cited by quality practitioners, that the only constant is in fact change. Excellence therefore is very much subject to temporal variations and is indeed ephemeral at best. This of course led to the birth of *Continuous Improvement* as strongly recommended by Quality Gurus such as Deming [1986], Juran & Gyrna[1980] and Crosby [1979, 1992]. Deming in fact produced the famous PDCA cycle to help implement continuous improvement in any scenarios.

Much of the development in management had been quietly observed by higher education managers [Barnett,1992; Green,1994; Idrus, 1999, 2000,2004; Idrus et al 2000] in order to improve the efficiency and effectiveness of higher education particularly in the face of its massification and thus increasing involvement of the private sector in higher education. The increasing demand for and expectations of higher education quality commensurate with its costs normally borne by parents and those who provide resources, had surreptitiously put "Quality" as the *de facto* higher education management choice number one.

No literature appears to be available that deliberately and specifically studies and traces the genesis of the conscious use of quality management in higher education. Nevertheless up to date, it appears that in the eyes of many higher education managers and researchers, quality has provided a satisfactory measure in order to sustain support for higher education's longevity.

Various government, semi-government and non-government agencies have been established to monitor higher education institution managements that they provide quality service in all respects to the paying students. In UK it is the Quality Assurance Agency (QAA), in Australia the Australian University Quality Agency (AUQA), in New Zealand the New Zealand Qualifications Authority (NZQA), in Indonesia *Badan Akreditasi Nasional – Perguruan Tinggi (BAN-PT)* the National Accreditation Board for Higher Education, in Thailand the Office of the National Education Standards and Quality Assurance (ONESQA) and in Malaysia the Malaysian Qualifications Agency (MQA).

The scopes and mandates of these various national agencies also vary from country to country with AUQA for example leading the pack on *fitness for purpose* audits rather than *standards-based* audits which are still being practised by BAN-PT of Indonesia and LAN the predecessor of MQA in Malaysia. Malaysia is rapidly revising its higher education quality policies and may introduce *self-accreditation* by Malaysian private universities. Such a move will bring Malaysia *on par* with many developed countries in this respect.

Many higher education institutions in Malaysia sought and obtained ISO 9001:2000 certification. INTI-UC for example is ISO9001:2000 certified and had recently successfully obtained re-certification for the next three years. Involvement with such standards exposes the higher education managers to the practice of quality in industry and heightens awareness of the required documentation system in order to ensure quality of all aspects of the institution's, so that it could itself promote and practise quality.

The huge investments by governments and the private sector alike on quality in higher education, somehow precludes and prevents everyone involved in the management of higher education to seek better and improved management system.

Higher education institutions could be accused rightly or wrongly of harbouring quality as their management philosophy rather than looking for better management practice that would improve teaching, learning, research, because the higher education system in particular and education system in general continue to practise a version of quality management that has well passed its *Use By* date and is rarely used in industry anymore. This is the practice of

Quality Control system which very closely resembles the education and higher education systems.

A brief review of quality and its traditional systems are discussed in the next section.

Quality, QC, QA and CI

ISO 9001:2000 standard defines Quality as *fitness for purpose* meaning that quality is achieved when the product or service meets the requirements of its intended use. Generally it *fits the purpose*s it is meant to provide the customers.

QC which is the abbreviation for Quality Control is defined as a system which involves an input, a process, and the output but also an inspection stage by which the acceptable products are separated from those that fail to meet the specifications. Diagrammatically the QC system is shown in Figure 1.
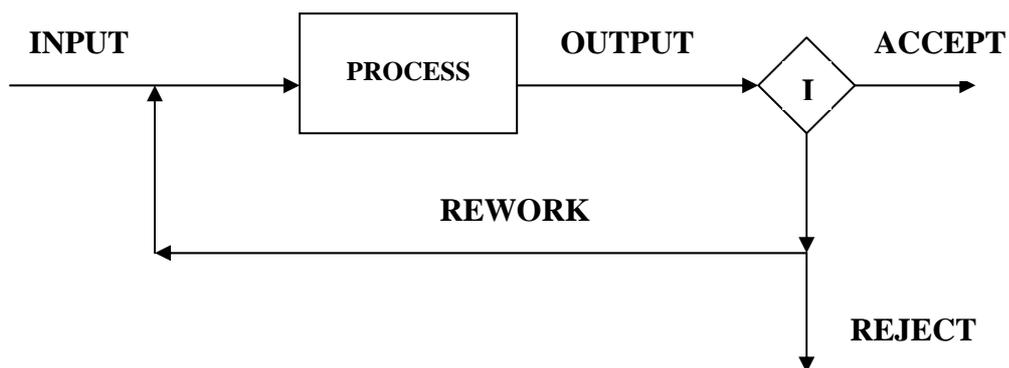
Figure 1 – Quality Control showing the pivotal role of Inspection "I"

As far back as 1921 Shewhart (Shewhart, 1921) devised a number of exquisite statistical methods to legitimize the extension of samples analysis to the real manufactured population.

However, even the sophisticated sampling theories and practices could not stop bad products reaching the customers. This *customer's risk* could obviously jeopardize the prestige and reputation of the company *vis a vis* its product quality. On the other hand, where samples analyses lead to the rejection of a whole batch of products, the *producer's risk* in this case refers to the existence of good products in the rejected batch. This situation then prevents the company to sell good products.

The focus of QC is on separating good products from bad. The practice of QC is therefore wasteful, firstly due to the existence of both customer's and producer's risks and secondly from the fact that the products are made first before separating the good from the bad amongst them. Those products which are rejected have therefore consumed all the necessary energy, effort, money and other resources that good products consumed, but are not able to be sold.

At best these rejects may still gain some returns by being sold as "seconds" and/or "rejects" but of course not at the same price as the good products.

Even a casual look at Figure 1 above shows a close resemblance to the educational system, where the Inspection "I" in QC is the Final Examination of a course in the education system.

While the disadvantages of the QC system in manufacturing are self-evident, those in higher education are not, for examinations are part and parcel of the education theory and practice. Otherwise how else could teachers be confident of the learning derived by the students?

As examinations are to test what the students had learnt from what the teachers had given during the process of teaching and learning, they inevitably test not what the students had understood but what they had remembered. This is very much the debilitating idiosyncrasy of examinations, but is difficult to let go as its disappearance may signal a lack of quality in the course or program.

What is also interesting about the above analysis is that when applied to education in Asia, the QC mentality of its education system mutually reinforces the *Acceptance* value of the Asians. Respect for the elders, for their teachers, professors, those respected in the eyes of the people, is the *Asian* value that had hindered students' ability to engage the teachers and consequently the students' ability to reconceptualize. Plotted in two dimensions, this relationship is shown in Figure 2.
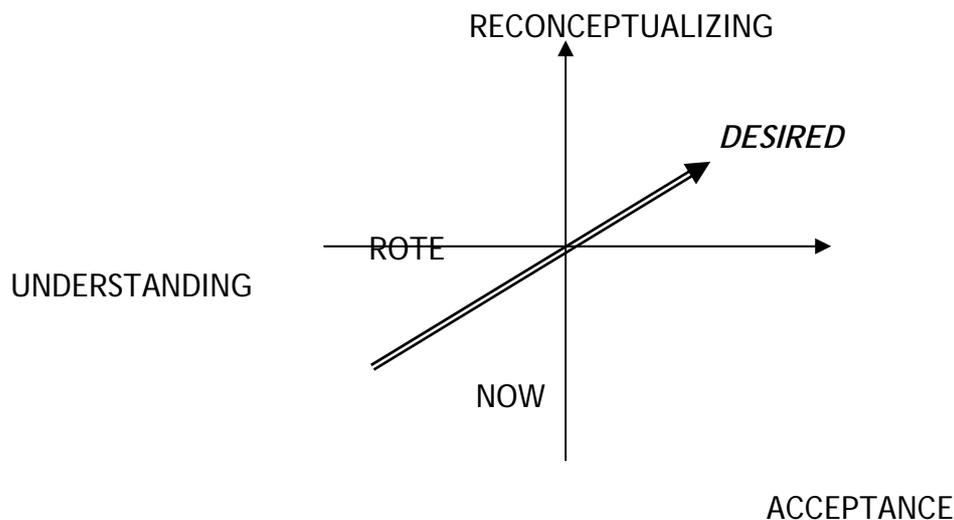
Figure 2 – The essence and description of Transformative Learning

As a result, the learning is by rote, defined as repetition without understanding, and by unquestioned acceptance which precludes the important learning exercise of re-expressing the concepts learnt on one's own. In Figure 2, this would be shown as the area in the lower left hand quadrant, when in fact the post-industrialized world demands from everyone in any organization an innate ability to understand, which leads to the ability to reconceptualize. We therefore need to move from the lower left hand quadrant in Figure 2, to the top right hand quadrant, in order to not only bring the Asian educated masses on par with their peers in the developed world, but also to ensure sustained development of all aspects of life in Asia generally.

In order to do so, the QC mind-set will also need to be replaced. As one of the Gurus in Quality had said that we must move away from the mentality of inspection (Deming, 1986). That basically means that we have to move away from QC. We must start moving ourselves to continually improving the *process*, because by so doing we assure the quality of the products. This amounts to moving towards QA.

QA is defined as the system that ascertains the meeting of all specifications by the products without the need for any inspection of the products. In higher education there was a lot of resistance to the idea evidenced by the lack of its implementation. It would appear that academics are not comfortable with the idea that courses do not need to be assessed through an Examination Paper even though there is an increasing number of courses which are assessed totally through course work alone. There is also no evidence of reduced quality of such courses. It is in fact simply an evolution in how the learning is assessed rather than diluting the learning or education in general.

The above resistance has been rationalized by many in Asia in particular, by saying that there is a lot of plagiarism and copying going on amongst students, that Asian students are not really after the learning or the education, but simply wanted the piece of paper at the end of the program.

This sounds like an indictment of the Asians in general, although it is in fact an indictment of the Asian teachers, lecturers and professors, for with a little hard-work in the part of these teachers, lecturers and professors, the copying and plagiarism that the students are accused of, can be significantly reduced if not eliminated.

It has been found that plagiarism in Asia is not confined to students only. However, these must not hinder progress in education generally and higher education in particular. Action must be pervasively applied to perpetrators of this crime by both academicians and law enforcers. The lack of regulations and in many cases enforcement against these people had indeed retarded progress in education in Asia generally.

The third major hindrance to progress in education in Asia is the lack of commitment to *Continuous Improvement* (CI), when CI has been proven to be pivotal to winning competition, to improving the quality of life, to improving education, to improving the quality of graduates that higher education institutions produce and hence to improving the quality of the country's human capital as a whole.

Deming's (Deming, 1986) PDCA (Plan Do Check and Act) cycle has been shown to be an imperative in organizational survival in this rapidly changing world where customers' expectations are continually raised by the ever increasing quality level provided by products and services and where customers do have the means and wherewithal to pick and choose.

Again, the educational sector in general had not been able to see and apply the PDCA cycle to its advantage, to the extent that it is not uncommon that industries are indeed well ahead of the educational institutions which are supposed to provide the human capital for these organizations.

Organizational Development in industry – a brief review

If we take the Industrial Revolution as the starting point for modern organizational development, then we have some 157 years of development in industries. If we consider higher education development, we would find that in fact the first university was set up over two hundred years before the Industrial Revolution. And yet, as mentioned in the previous paragraph, higher education has been left behind by industries, for reasons that have already been discussed above. The resistance to change in higher education generally adds to this gap.

Figure 3 summarizes one possible development in industry since the Industrial Revolution. The Six Million Dollar question is, where is education in this scenario?
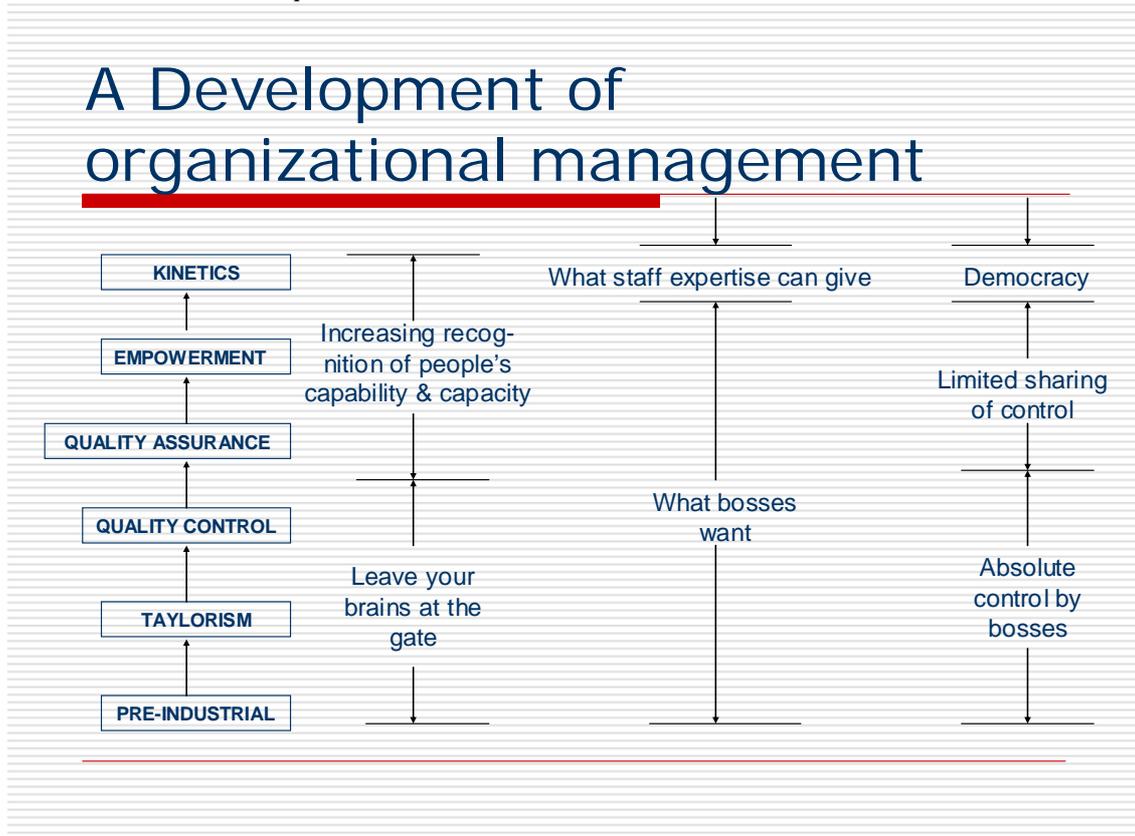
Figure 3 – A summary of organizational development in industries
(also showing the related practices in the range of managements)

With the publication of the book *Blue Ocean Strategy* by Chan Kim and R Mauborgne (WC Kim & Mauborgne, 2005) recently, many organizations are already considering the strategic approach discussed in the book.

Blue Ocean Strategy management could therefore be included in Figure 3 to sit on top of Kinetics management. Indeed Kinetics management and Blue Ocean Strategy management appear to dovetail each other well. While Kinetics management underscores the need to look at the forces that create changes (in preparing organizations for the unpredictable world), the Blue Ocean Strategy management emphasizes strategy differentiation (in contrast to *product differentiation*) to make competition obsolete. Figure 4 shows an example in higher education, where *Transformative Learning* is a potent candidate for Blue Ocean Strategy management for it is not only a different look at how teaching and learning to be organized in

Asia, but that it is indeed directly opposite to current practices of teaching and learning that have been proven to disadvantage our graduates.

An example of a Strategy Canvas – Transformative Learning
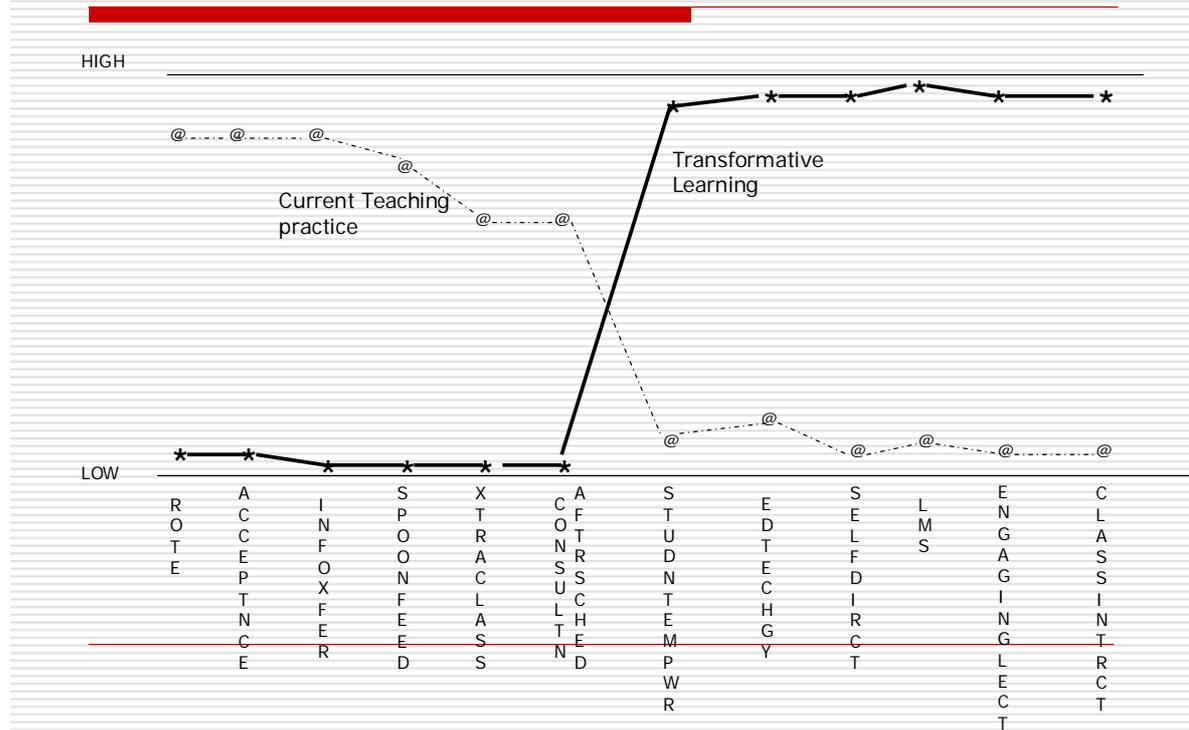
ROTE= rote learning, repetitions without understanding; ACCEPTANCE = mentality of acceptance without question and thus precluding reconceptualization; CONSULTN AFTRSCHED= student consultation with lecturers outside time-table; STUDNTEMPWR= student empowerment; EDTECHGY= the use of educational technology; SELFDIRCT= self-directed learning; LMS= learning management system; ENGAGINGLECT= interactive engagement of lecturers by students leading to reconceptualization; CLASSINTRCT= class interaction between students and lecturers and between students and students

Figure 4 – An example of using Blue Ocean Strategy in Higher Education
(the application of Transformative Learning)

As discussed earlier and referring to Figure 3, higher education is still shackled in the QC era and is some 4 management levels behind industries.

DISCUSSION

Clearly, further reforms in education generally and higher education in particular will need to happen if the expected roles of higher education are to be maintained *vis a vis* industries. There are many management developments that higher education must keep itself abreast with, but little if any of these has been adopted and/or adapted by the higher education industry, to its own peril.

The rapid obsolescence of knowledge, particularly in areas such as electronics, computer technology and now management, should have been signs enough for higher education to seek recourse to keep itself current.

The concentration of higher education on quality and quality-related management appears to begin to wane and a *replacement* seems necessary, again if we wish to ensure that higher education remains current. We must therefore need to look beyond quality. The management or organizational development in industries summarized in Figure 3 may provide some guidance.

CONCLUSION

While development in the environment encircling higher education has been vigorous and decidedly resolute, development in higher education management has been sheepish and lagging behind industries.

It is time to look beyond Quality and consider Kinetics and Blue Ocean Strategy management in higher education in all its aspects in order to prop it to leadership position in human capital development.

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DEVELOPING THE WHOLE PERSON: CAN SERVICE-LEARNING HELP INCREASE THE ETHIC OF SERVICE IN ASIAN COUNTRIES? AN INTRODUCTION TO THE ETHIC OF SERVICE AMONG ASIAN BUDDHIST UNDERGRADUATE STUDENTS

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ABSTRACT

Developing the whole person integrates respect for self and respect for community. The utilization of service-learning, a teaching method linking community service to curriculum, has grown substantially in higher education during recent years. The encouragement from national service programs in the United States (for example, Learn and Serve America and Campus Compact), and research based on additional successful programs, has propelled a shift in educational models towards this teaching philosophy and method. In addition to the benefits of increased interest and participation in the learning process, the growing body of research illustrates the importance of this learning model as a means of creating socially responsible members of society. Previous research clearly identifies benefits of service learning to both students and communities. Thus far, service-learning has been uncommon in Asian countries; examples of service-learning have typically come as a result of a study-abroad experience. Before an expansion of service-learning in Asia occurs, it is important to understand the cultural beliefs relating to service. This study investigates the current ethic of service among undergraduate students at an Asian international university. Exploration regarding where students volunteer and the value of service both personally and professionally helps provide further insight.   Further, the research explores the differences between male and female participation in service, religious belief, and other demographics. This research informs how service learning can create an ethic of service in an Asian context. The study concludes with further implications and ideas for future research.

INTRODUCTION

The increase in service learning, a teaching pedagogy engaged by community service linked with curriculum, has come as a result of identified need for educational reform in the United States over the past 70 years, with significant increase during the last 20 years. The American Association for Higher Education (AAHE) defines service learning as, "a method under which students learn and develop through thoughtfully organized service that: is conducted in and meets the needs of a community and is coordinated with an institution of higher education, and with the community: helps foster civic responsibility; is integrated into and enhances the academic curriculum of the students enrolled; and includes structured time for students to reflect on the service experience." (Campus Compact, 2006)

Two important organizations that have encouraged the expansion of service-learning in the United States have been Learn and Serve America and Campus Compact.   Learn and Serve America, a program of the Corporation for National and Community Service, supports and encourages the use of service-learning in the United States and enables over one million students to make meaningful contributions to their community while building their academic and civic skills. (Learn and Serve America, 2007) This organization provides educational

information and support for current practitioners of service-learning, provides start-up tool-kits for faculty members new to the practice of service-learning, and provides funds to help support service-learning programs nationwide. Campus Compact, another organization focused on service, is "a coalition of nearly 1,100 college and university presidents — representing some 6 million students — who are committed to fulfilling the public purposes of higher education. As the only national association dedicated to this mission, Campus Compact is a leader in building civic engagement into campus and academic life." (Campus Compact, 2006) Both public and non-public universities are members. Their mission is engaged through: training for faculty, staff, students, administrators, and community partners; research on service; resources including print and online books and materials; leadership development for administrators; capacity building through infrastructure; advocacy and policy work; grants, funding, and awards; and partnerships with academic, community, business, and government leaders. (Campus Compact, 2006)

With the help of organizations like these, the use of service-learning has grown substantially in the last 20 years. The data are numerous related to service learning in the context of the United States, however research on this topic is lacking from other countries. Although forms of service-learning are being utilized at a majority of university campuses across the United States, little has been researched about service-learning in Asia. Service-learning is used in Asia, however it is typically a result of a study abroad experience; a university in the United States has initiated the service-learning program, but the practice (service being performed) takes place in an Asian country. While there has been an expressed desire to use service learning in Asia, few universities have implemented it.

Before an expansion of service-learning in Asia occurs, it is important to understand the cultural beliefs relating to service. There is a need for further research in this area. The researcher intends to investigate Asian cultural beliefs relating to service and volunteerism in order to help practitioners design appropriate programs for this population of people. This study investigates the current ethic of service among Asian Undergraduate students at an Asian International University. The researcher hopes to uncover information regarding the following questions:

How important is the act of service to Asian students?
Do Asian students believe that volunteering makes individuals socially responsible?
What role do friendships play in regards to the level of service of Asian individuals?
What role, if any, does religious belief and practice play in volunteering for Asian students?
Are Asian students interested in taking a service-learning course?

RESEARCH METHODOLOGY

A survey instrument, the Service Ethic of Asian Students (*SEAS*), has been designed by the researcher as a result of reviewing several instruments used in service-learning research obtained from *At a Glance: What we know about the Effects of Service-Learning on College Students, Faculty, Institutions, and Communities*. (2001) The researcher has experience working with Asian students and has an understanding of Thai culture resulting from time spent in Thailand as well as further study and research. Although a citizen from the United States, the researcher has spent two years teaching in the same faculty as surveyed at a university in Thailand. When developing the survey, the researcher attempted to reflect the Asian context by considering the following factors: the students taking the survey will be non-native English speakers, the students represented will likely be primarily Buddhist, the students surveyed will likely be coming from both genders in nearly equal amount, the students who will be distributed the survey will be undergraduate students taking courses near

the end of their study, and the "volunteering" experience on Asian university campuses is much different than in the United States.

LITERATURE REVIEW

The pedagogy and practice of service learning roots back to John Dewey's theory of experience in education released in 1938, however the movement gained significantly in practice after "A Nation at Risk" was released in 1983. John Dewey, in *Experience and Education* claimed, "…The (educational) philosophy in question is, to paraphrase the saying of (Abraham) Lincoln about democracy, one of education, of, by, and for experience. (Dewey, 1938) Dewey emphasized that the focus of education should come from experience *because we learn from our experiences*. However, he has emphasized that this experience should come in the positive form that educators should "discriminate between experiences that are worthwhile educationally and those that are not." (Dewey, 1938) The progressive movement in education seems to be more in accord with the democratic ideal to which people are committed to than do the procedures of the traditional school; the practice of experiential education helps contribute to a progressive democratic society. (Dewey, 1938) The National Commission on Excellence in Education produced the document, *A Nation at Risk*, which after eighteen months of research identified problems with the educational system in the United States and offered recommendations for improvement. The document suggested, among many other recommendations, the importance of community involvement in contemporary educational institutions. Tools to help improve the educational system should come through "the voluntary efforts of individuals, businesses, and parent and civic groups to cooperate in strengthening educational programs." (A Nation at Risk, 1983) The increase in service learning, community service linked with curriculum, has come as a result of these two seminal works, in addition to many others.

In the context of the United States, one focus of service-learning research has been whether service-learning has the ability to help develop a sense of social responsibility and engaged citizenship. In the article, *The Impact of a College Community Service Laboratory on Students' Personal, Social, and Cognitive Outcomes,* Giles and Eyler have discovered that after participating in a service-learning project, undergraduate students claimed to be more likely to volunteer in the future. (Giles, Eyler, 1994) The study also indicated that more than 50% of the students indicated that the most important thing they learned about the service-learning experiences was "a commitment to social service." (Giles, Eyler, 1994)

In her article, *Education of the Heart: Service-Learning and Shaping the World We Live In*, Florence McCarthy asks, "In what kind of world do we want to live?" She continues with the importance of students to consider this question; they are the shapers of the future world. How are today's students being prepared as shapers of our future environment? McCarthy focuses on the importance of the educational development of the "heart" as a means of becoming a whole person. "When we speak of educating the heart, we are speaking of the processes by which we pay attention to and nurture the development of our emotions, our social relationships with others, and our facilities to understand, to have insight, and to learn from our experiences. These are qualities that are associated with our hearts--the source of our deepest emotions, where we harbor those we love and most admire, and where resides the qualities that makes us human and adds meaning to our lives." (McCarthy, 2007) According to McCarthy, Service-Learning is a means of linking the education of the heart with the education of the mind. What we need for the future is the fullest development of both our minds and our hearts. Without social experience that enables us to deal with people, to be flexible, to participate in rapidly changing situations, and to be a good colleague and friend, we will be unprepared for participation in the global arena. Without strong social

relationships and skills, without sympathy and understanding of difference, we will be largely unfulfilled, isolated individuals, unable to meet the demands on us as workers, husbands or wives, parents, citizens and leaders; learning from facts and book knowledge is not enough, not all of life's answers are on the internet, something more is required. (McCarthy, 2007) Service-Learning provides the bridge between knowledge and the development of the whole person.

Service-learning is used in Asia; however it is typically a result of a study abroad experience. Several examples of this type of study-abroad service-learning experience include university students traveling to Asia to help: accelerate tsunami clean up activities related to health services, psychological services, and carpentry; improve livelihood of endangered animal and plant species; ensure the sustainability of important cultural traditions and arts; improve English speaking skills in the host country; and build skills in business and marketing to help promote independence.

Before faculty and students in Asia implement service-learning program in an Asian context for Asian students, it is important to understand the cultural beliefs relating to service among Asian students. The conversation has begun; in recent years several universities in Asia have begun to utilize service learning programs. The Service-Learning Asia Network (SLAN) is a forum for colleges, universities, and institutions in the Asia region interested in sharing experiences and promoting mutual exchange. (Service Learning Asia Network [SLAN], 2007) Several universities from its member directory include: International Christian University in Tokyo, Japan; Petra University in Surabaya, East Java-Indonesia; Seoul Women's University in Seoul, Korea; The American College in Madurai, India; Chung Chi College, The Chinese University of Hong Kong in Hong Kong; Silliman University in Dumaguete City in the Philippines; Soochow University in Taipei, Taiwan; and Payap University in Chiang Mai, Thailand. Several of these universities have already established service-learning centers in order to create infrastructure for the programs, build collaboration with partners, and produce research in this field. Although these universities have taken large steps toward embracing service-learning, many other universities in the Asia region have not. Studies like this one will help university practitioners in Asia develop appropriate service-learning programs in an Asian context.

BACKGROUND OF THE STUDY

This study has been distributed at an International University in Thailand. Although the student population is predominantly Thai, there is representation of many other countries, primarily the countries of China, Japan, Korea, and India. Other countries represented in smaller numbers come from Myanmar, Laos, Cambodia, Vietnam, Taiwan, Malaysia, etc. Because of this variety of Asian culture among the students, this university appears to be an ideal place to conduct this study. Due to time constraints, international communication time differences, and international delay with postage shipment, the surveys delivery has experienced unforeseeable impediments. However, the researcher has been able to find several important findings related to the Asian ethic of service in a short period of time. Because the number of surveys returned has been significant and the data are plentiful, the researcher has focused on only a few facets relating to the Asian ethic of service for this paper. Further research and publication will result after the rest of the data have been analyzed.

The researcher has chosen several key items as an overview of the study to help uncover a "snapshot" of the Asian ethic of service. The number of surveys returned by undergraduate students has come primarily from students identifying themselves as Buddhist; in fact, 88% of the returned surveys came from students that claim to practice Buddhism. This population appeared to be an important group to focus on for the purpose of this initial paper, particularly

because Buddhism is the dominant religion in Thailand. In fact, 95% of Thailand's citizens are Buddhist; therefore Buddhist traditions overflow into Thai culture. (Tourism Thailand, 2007) Demographic variables that are focused in this study relate to religion and comparison of male and female involvement in volunteering.

A second salient item relates to where students are currently volunteering. Students have been asked to describe current volunteering participation in the university setting (university initiated service), in the general community, in the students' religious community, and in the family. In the United States, the topic item relating to family service would not necessarily be considered volunteerism. But after several years of observing the culture and behavior of Thai citizens, the researcher identified that this important relationship of family service in the Asian context should not be disregarded. Therefore, the item related to family service "up and beyond the typical family duty" has been added to the survey instrument..

Third, the students' values relating to the ethic of service focused on: the importance of volunteering to the student, the impact of friends' participation in volunteering, the value of volunteering as the opportunity to develop professional skills for the students' career, and the belief relating to if volunteering makes the student a socially responsible contributor to society.

Fourth, the researcher wanted to inquire about whether or not students would be interested in participating in a service-learning course. Two items focusing on the students' desire to participate, and the influence of friends' participation in the service-learning course, have also been analyzed. Plans for future analysis of this data will be described later in this paper.

SURVEY OF ASIAN UNDERGRADUATE STUDENTS AT A THAILAND UNIVERSITY

Return Rate of Respondents

As seen in Table 1, the response rate of students is notable, 500 surveys were distributed to undergraduate students taking classes at the third and fourth year level (juniors and seniors). The surveys have been distributed in classrooms of 50-60 students taking courses at the third and fourth year level in the School of Management. Of the 500 surveys distributed, 379 were returned; an impressive return rate of 75%. This high return rate is due to the cooperation of the administration of the school, in addition to the faculty members; they administered the surveys in class, gathered the surveys, and returned them to the school office. The response rate was to some extent determined by the attendance on the day of distribution. Without the cooperation of the faculty members, the response rate undoubtedly would have been much lower.

Table 1. Return Rate for SEAS Survey

Characteristic	Frequency (n)	Relative Frequency (%)
Surveys Distributed	500	
Surveys Returned	379	75.80%

Demographic characteristics of students: Gender

Table 2 below shows several distinctions: There were more female respondents than males. While female participation in higher education is at nearly equal levels in Thailand, some majors of study are still predominantly male or predominantly female. Further analysis of the respondents' declared major will provide additional information on this piece of the research.

There were several students that did not specify gender, or identified themselves as both genders. This should be considered in future instrument development and analysis, as many institutional researchers are looking into how students identify themselves related to their gender identity.

Table 2. Sample by Gender

Characteristic	Frequency (n)	Relative Frequency (%)
Female	214	56.46%
Male	159	41.95%
Unspecified	6	1.59%

Demographic Characteristics of Students: Religious Practice

Table 3. Sample by Religious Practice

I Practice a Religion:	Frequency (n)	Relative Frequency (%)
Yes	373	98.42%
No	6	1.58%
My Religious Practice is:	**Frequency (n)**	**Relative Frequency (%)**
Identified as Buddhist	332	88.00%
Identified as Christian	13	3.00%
Identified as Nonreligious	17	4.00%
Identified as Muslim	4	1.00%
Identified as Hindu	2	less than 1.00%
Identified as Taoist	1	less than 1.00%
Identifed as Jainist	1	less than 1.00%
Did Not Identify Practice	9	2.37%

Table 3 above identifies the response to the phrases "I practice a religion" and "If yes, my religion is." The response was overwhelmingly identified as Buddhist, which is not surprising considering the country of Thailand as a whole is 95% Buddhist, as said previously. Because this university attracts international students, the rate of Buddhists is 7% less in the student population than in the general population in Thailand. Six different religions have been identified in total, in addition to the students who did not respond and those who have identified themselves as non-religious. Students identified as non-religious marked that they do not practice religion in the primary question.

Buddhist Practice by Gender

In Table 4 below, note that the percent of Buddhist females to Buddhist males is in accord with the overall female to male ratio of this sample. Therefore, this group of students is a fair example of the students at this university. Because Buddhism was the predominant religion among this group of Asian undergraduate students, the researcher has focused the rest of the research analysis on this group. However, further analysis of the data in future research will also dissect the remaining religions to compare the volunteering differences, if any, between Buddhist students and students from other religions.

Table 4. Buddhist Practice by Gender

Gender	Frequency (n)	Relative Frequency (%)
Female	191	57.53%
Male	141	42.47%
Total	332	

Where Asian Buddhist Students Volunteer

Table 5. Mean and Standard Deviation Where Buddhist Asian Students Volunteer   (3 point scale)

VOLUNTEERING LOCATION	MEAN	STDEV
University Volunteerism	1.7272	0.5627
Service Organizations	1.6382	0.5651
Academic Dept Activities	1.7058	0.6385
General Community	1.8205	0.5815
Non-profit Organizations	1.9716	0.7490
Business	1.6562	0.6778
Other	1.4712	0.5874
Religious Community	1.8429	0.6192
Food, cleaning temple	1.9285	0.7317
Educating children	1.7102	0.7269
Organinzing events	1.7087	0.7089
Other	1.3513	0.5596
Family Community	2.4000	0.5855
Elderly Relative with needs	2.3909	0.6367
Young relative with needs	2.3873	0.6204
Handicapped relative with needs	2.0857	0.6521
Neighbor with needs	1.9615	0.5383

Using a 3 point scale (3 much, 2 some, 1 none), the instrument described different volunteering activities through four separate locations: through the university, through the general community, through the religious community, and in the family. It should be noted that, regarding the family volunteering, the instrument stated "up and beyond a typical family duty." So, where do Buddhist Asian students volunteer?   As seen in Table 5 above, you will notice that the means for volunteering in the students "family community" are significantly higher than the means of the other volunteering locations of university, general community, and religious community. Researchers might speculate that part of this relates to the amount of time that Asian students spend with their families. In Thailand, it is typical for a student to live with his or her parents until he or she is married. This factor alone is unique to Western countries, where students typically leave home between ages 18-24, certainly before marriage.

Other reasons for this high mean score may come from other factors of Asian culture: the respect of elders and ancestors, the closer "grip" Asian parents have on their children as a means of protecting them from the cruel world, and the importance of maintaining relationships with family and neighbors.

Of the other locations, it appears that Asian students spend time volunteering at non-profit organizations and volunteer for their religious community, particularly in the areas of food, cleaning, and maintenance of the temple. It is important to note that of the four locations identified, the university setting had the lowest mean score of volunteering. Are the students being provided with adequate opportunities for volunteering at universities in Asia, and furthermore are the opportunities available of interest to the students? These are questions to consider upon further research.

The standard deviations in this table identify that while the students do agree strongly on many of the areas, they do not agree as much related to volunteering at non-profit organizations. In addition, the strongest variation falls under religious community volunteering, particularly in the areas of food, cleaning of the temple; educating children; and organizing events. Further breakdown for comparison is necessary and will be displayed in Table 6.

In Table 6 below, the means and standard deviations have been separated by gender. Do female and male students volunteer in the same places? Table 6 shows that females' primary location to volunteer is in the family community, with a high mean of 2.46, by assisting both elderly relatives with needs and young relatives with needs.

Table 6. Mean and Standard Deviation Where Asian Buddhist Students Volunteer by Gender
(3 point scale)

Volunteering Location	Female MEAN	Female STDEV	Male MEAN	Male STDEV
Through the University	1.7285	0.5362	1.7254	0.6026
Service Organizations	1.6346	0.4862	1.6428	0.6559
Academic Dept Activities	1.7966	0.6638	1.5813	0.5868
General Community	1.8030	0.5029	1.8431	0.6744
Non-profit Organizations	1.9824	0.7194	1.9591	0.7894
Business	1.7307	0.6298	1.5681	0.7280
Other	1.5319	0.5842	1.4000	0.5905
Religious Community	1.7714	0.5939	1.9411	0.6453
Food, cleaning temple	1.9230	0.7563	1.9361	0.7041
Educating children	1.6129	0.6364	1.8444	0.8244
Organinzing events	1.6666	0.6900	1.7608	0.7358
Other	1.3777	0.6138	1.3103	0.4708
Family Community	2.4637	0.5835	2.3137	0.5827
Elderly Relative with needs	2.4920	0.5922	2.2553	0.6746
Young relative with needs	2.4516	0.6187	2.3061	0.6192
Handicapped relative with needs	2.1625	0.6382	2.0000	0.6666
Neighbor with needs	1.9491	0.5059	1.9777	0.5834

While the males have identified the family community as their highest volunteering activity as well, they have also validated the importance of the religious community through their volunteering participation. This finding might be explained by the important role in Thai Buddhist culture for males to spend an unspecified amount of time (however, one month is common) serving as a monk at a temple before they get married. This important piece of Thai culture may contribute to this significantly higher mean compared to females. While males do not agree in where the volunteering time is spent in the religious community, as displayed in higher standard deviations, they do agree that they spend time volunteering for their religious community.

Within the university setting, females and males rate volunteering at nearly the same level. Females tend to agree more strongly on this, and the females have identified academic department activities as their primary volunteering activity at the university. Are males and females volunteering through the university at the same rate? Further research should explore this topic.

Volunteerism Values

Table 7. Mean and Standard Deviation Volunteering Values (5 point scale)

Value/Belief	n	MEAN	STDEV
Importance	332	3.4802	0.7613
Friends Participation	332	3.5136	0.9598
Professional Skills	332	3.7912	0.7685
Social Responsibility	332	3.8629	0.7825
Service-Learning Course Offering	332	3.5389	0.9249
Friends Participation Service-Learning	332	3.3550	0.9771

The next segment of the instrument focuses on the values that these students have in regards to volunteering. Based on a 5 point scale (5 strongly agree, 1 strongly disagree), this part of the instrument has been separated into five sections: *importance, support, benefits, effects, and possible service-learning course*. Within the 23 items, the researcher has chosen 6 to focus on for the purposes of this study, due to time constraints. All 23 items will be thoroughly examined and published in future research.

Table 7 displays these values. Overall, the means were high in this section. Students have identified they have strong values relating to volunteering, even if it appears they are not volunteering much in the community. The *Importance* value is a result of the item "Volunteering my time to serve others is very important to me." While this mean is lower than the rest of the selected means, it is still high on a five point scale. The *Friend's Participation* value reflects the item "My friends' participation in volunteering encourages me to volunteer also." *Professional Skills* is a result of "Volunteering will give me skills to help me in my professional career." This mean was the second highest, following just behind *Social Responsibility*, the highest mean at 3.86, which is reflected from "I believe that volunteering makes me a socially responsible contributor to society."

In regards the *Service-Learning Course Offering*, the item stated, "The University should offer a course that integrates volunteering with the curriculum (a service-learning course). The second service-learning item stated, "If my friends were taking the course, I would sign up for the service-learning course." When the females and males value scores are compared in Table 8, more information is revealed.

Table 8. Mean and Standard Deviation Volunteering Values of Males and Females (5 point scale)

Value/Belief	n	Female MEAN	Female STDEV	n	Male MEAN	Male STDEV
Importance	191	3.4680	0.7342	141	3.4964	0.7984
Friends Participation	191	3.4840	0.9219	141	3.5531	1.0101
Professional Skills	191	3.7910	0.7677	141	3.7426	0.7697
Social Responsibility	191	3.8864	0.7753	141	3.8308	0.7940
Service-Learning Course Offering	191	3.5891	0.8494	141	3.4705	1.0179
Friends Participation Service-Learning	191	3.3551	0.9427	141	3.2426	1.0146

Both males and females agreed that volunteering makes them a socially responsible contributor to society. The standard deviations for this item are lower than some of the others, indicating that overall students tend to agree on this item.

Interestingly, males ranked *Friends Participation* in volunteering higher than the females. Clearly the volunteerism activities of both males and females friends affect their contributions. In addition, it is important to note that since this is ranked highly in addition to *Friends' Participation in Service-Learning,* the enrollment of any service-learning courses offered might be reflected by this item. Not surprisingly, the standard deviations among the values items were much higher, particularly because there are some students who are serving little, and other students who are serving a lot. The numbers have reflected this variation both overall and within genders.

Table 9. Volunteering Values Correlation Both Genders

r	1	2	3	4	5	6
1. Importance	1	0.2830	0.2886	0.3155	0.3474	0.2496
2. Friends Participation-Volunteerism		1	0.2253	0.2149	0.3730	0.3392
3. Professional Skills			1	0.3835	0.3521	0.1655
4. Social Responsibility				1	0.3268	0.0965
5. Service-Learning Course Offering					1	0.5309
6. Friends Participation-Service-Learning						1

Table 9 shows the level of correlation between each of the values. The strongest correlation comes between *Service-Learning Course Offering* and *Friends' Participation in Service-Learning*. Another noteworthy correlation comes between the *Friends Participation* in volunteering and *Service-Learning Course Offering*. Both of these reiterate that students' participation in volunteerism correlates with whether or not their friends are also participating. This is more predominant in Asian culture where many of the students already have friends attending the university when they begin study. Therefore, their university experience is reflected upon their relationships with established friends. This should certainly be taken into consideration when developing a service-learning course in Asia.

CONCLUSION

Important Findings

While the data received from the surveys have not been analyzed in full, several important findings have occurred during this analysis of several sections of data. These will be helpful in providing context before the rest of the analysis occurs. After analyzing the items selected for this study, there are several noteworthy findings to report:
-Asian Buddhist undergraduate students have a strong ethic of service towards their family and neighbors.
-Asian Buddhist undergraduate students are currently not serving in the community at the same level that they serve family and neighbors.
-Female students volunteer for family and friends more than males do, while male students volunteer more in the Buddhist religious community than females do.
-Both males and females indicate the importance of friendships in choosing volunteering activities, in volunteering rates, and whether or not they would be likely to take a service-learning course.
-"Development of the whole person" values have been marked as significant; these include: the importance of volunteering to Asian Buddhist students, the belief that volunteering makes

the student a socially responsible contributor to society, and the belief that the act of volunteering can help build professional skills the student will use in his or her future career.
- Asian Buddhist students are interested in taking a service-learning course.

Recommendations

Based on the analysis, the researcher has several recommendations for practitioners at universities in Asia to consider. First, there is a need for expansion of service-learning programs in Asia. Asian Buddhist students are volunteering for family and neighbors, however they are not volunteering in the university, the general community, and the religious community at the same rate. Service-Learning programs must include volunteering in the community; volunteering in these settings is of utmost importance in helping what Florence McCarthy describes as *educating the heart*. Without the ability to use social skills that include empathy, compassion, and understanding, the students will become isolated and find little reason to help strangers that may desperately need their help. As future leaders in all forms of industry and society, students must build skills of social understanding in order to role model socially responsible behavior to employees and to their future children. In addition, many students have been sheltered by the same family, neighbors, and friends that they serve. When the student enters the workforce, he or she may have a rude awakening of the "real world;" if universities do not prepare students to have a global perspective and to understand all of the dimensions of their own society, they will be doing the students injustice and will not be adequately preparing them for the skills they need to survive in modern global society.

Because students have identified that they volunteer as a means of building skills they will use in their professional career, the service-learning programs developed should take this into consideration. Utilizing different service-learning programs for different majors would be the best way to ensure the students build appropriate skills and experience. With an unlimited amount of service-learning types, this is not an unreasonable request.

Future Research

Future analysis of the data from this instrument will reveal differences among religion, ethnicity, and degree major. Although students all come from the same faculty, the School of Management, there is diversity among the majors that have responded to the survey.   All of these variables might produce important findings relating to the Asian ethic of service. In addition to the previously mentioned items, students have replied to further statements relating to the importance of volunteering, the support of volunteering, the benefits of volunteering, and the effects of volunteering. Several items on the survey related to the concept of karma. Because a majority of the students have identified themselves as individuals who practice Buddhism, the researcher would like to investigate whether the belief in karma has an impact on the amount of volunteering being performed and/or where the volunteering service is being performed.

The researcher hopes to provide a follow up survey in one year's time to further understand the ethic of service. In addition to the future analysis of the rest of the data received, a future survey will be developed as a result of the analysis, with continuing publication on this important piece of research. Additional research should be done in this area; of particular interest would be identifying how many hours students spend volunteering, what specific activities they are volunteering for through the university, and what type of service activities they would most be interested in doing through the university as a means to help developers of service-learning programs in the Asia region.

Asian undergraduate students deserve the opportunity to experience an awakened heart paired with an awakened mind; with the appropriate adaptations for cultural relativity, service-learning programs at universities in Asia have the potential to not only transform the student into their "whole person, " but also to transform society.

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STAFF PERCEPTIONS OF HUMAN RESOURCES SERVICES IN A TECHNOLOGICAL UNIVERSITY

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ABSTRACT

It is important that institutional researchers widen their scope to cover the support units of higher education institutions. The literature suggests that there is a dearth of such published studies. Yet certainly in Australia, support areas consume around a third of the financial resources of the institution. Accordingly it is important to inter alia study client satisfaction with service delivery by such units. This study reports on a survey of staff perceptions of service delivery and related issues concerning Human Resources department within an Australian technological University. It was found that the satisfaction rates for most of the services delivered by Human Resources were relatively high. Nevertheless some concerns were raised by respondents in certain areas requiring future action in the quest to improve the quality of the services.

Keywords: Human resources, staff satisfaction, awareness of employment entitlement

INTRODUCTION

The Resources Division within the Case Study University expressed an interest to undertake a survey of staff satisfaction, thus allowing them to track whether continuous improvements were being achieved in the quest for Quality Assurance and Management for that support organisational unit within the institution. For 2006 it was decided that inter alia Human Resources (HR) be requested to participate in the survey. In order to pursue the HR survey, the survey instrument was drafted within the Vice President (Resources) Office; this was then considered by the Director, Human Resources and HR staff who decided to capture some additional data so as to enhance the business processes within HR. Subsequently, the agreed survey instrument was implemented during late July/early August 2006. It is the purpose of this report to document the qualitative and quantitative findings of the Human Resources Department Survey.

Some researchers have observed that although much in the way of published institutional research have been undertaken in the past in the frontline activities and more particularly in respect of student surveys, somewhat less investigations have been conducted in support areas of universities, particularly in respect of staff surveys and the like. Given that around a third of the University expenditure (at least in Australia) is sustained by support activities, it is important for institutional researchers to place these areas under greater scrutiny. It is hoped that the present study that focuses on one of the support units (Human Resources) will assist in kindling greater interest in this area.

LITERATURE REVIEW

It is suggested by the literature that employee satisfaction is a key goal in setting up human resources plan
(http://www.jhint1.net/JHI/English/Doctors/Publications/IPU_Mar04_HumanCapital.asp).

Further that article maintains that at a deeper level, employee satisfaction can translate into client satisfaction. Although such observations were made in respect to the health services, there are enough parallels between that industry and education for the latter to heed the advice. For instance both are relatively labour intensive and have highly qualified front line staff.

Harvard University (2002) reports that whilst it is relatively easy to measure University success relatively easily in terms of admissions yield, alumni achievements, research outputs, external rankings and the like, when it comes to assessing Harvard University as an employer, the metrics to be used are not as clear. This article emphasizes the use of employee surveys as key indicator of success in attracting and retaining talented workforce at the university; besides it suggests that worker satisfaction can be linked directly to their productivity. This then provides cogent reasons for this institutional research that consider University staff satisfaction with various services provided by a Technological University in Australia.

Eastern Kentucky University (2005) reports on a survey undertaken at the University in 2004 to assess the faculty and staff satisfaction with the services provided by Human Resources and Payroll. It found that the top three strengths of this management unit included its willingness to assist employees, HR and Payroll staff being courteous and the Payroll section consistently receiving a large percentage of positive responses. On the other hand challenges for HR and Payroll at the University included lack of effective communication, responsiveness and dissatisfaction with the Benefits Division. The report recommends a follow-up survey to measure progress in meeting HR and Payroll customer needs.

The University of Louisville (undated) reports on an employee satisfaction survey including certain key findings such as that academic and support staff like their jobs, they feel challenged by their work and are respected by their supervisors. However University staff expressed concerns about salaries, chances for advancement and administrative attention to employee satisfaction. The latter issue is partially related to the present study, namely, in its intention to consider how the Human Resources department is addressing staff expectations of their services.

A Carnegie Mellon University survey of employee satisfaction (Cribbs, undated) suggests that although it is human nature to complain, that University's staff were generally satisfied with their work environment. The survey found that while there was room for the University to improve in some areas, none were found to be glaring weaknesses or challenges requiring immediate attention. Cribbs (undated) indicates that the rather positive outcome of the human resources survey probably reflects the fact that the University work environment is very attractive to many people.

Reid and Hutton (2004) suggest that knowing and understanding the perceptions of staff about their workplace and related issues enables decisions to be evidence-based. This is an area where institutional researchers can make a unique and very important contribution towards the management of universities and forms cogent reasons for the present study that focuses on staff perceptions of Human Resources service delivery within an Australian University of Technology.

SURVEY METHODOLOGY

The survey questionnaire used in an earlier survey was updated by the Vice President (Resources) Office and sent to the Director, HR for changes. The Director decided to use the opportunity to consult widely with her staff and received a range of inputs from within the HR department. Although many of the key elements from the earlier survey (including frequency of use, satisfaction with services and many of the demographic variables with some modifications) were retained to expedite temporal comparisons, other business related issues such as conditions of employment and enhanced qualitative elements were added to the survey instrument. The survey instrument was then uploaded on to the website using Opinio. An official e-mail inviting all staff to participate in the Survey was sent by the Director, Human Resources. Approximately 370 valid responses were received to the survey questionnaire. We believe that this response is reasonable and should provide indicative perceptions of the University's Staff who constitute the major clients of the Human Resources Department.

RESULTS OF THE SURVEY

Demographic and Related Variables:

The demographic data collected from the respondents permits the following observations:

- As expected in a University of Technology, the support/administrative staff (54%) tend to dominate in terms of responses received; however the response received from this group appears slightly greater than the total population of staff (49%). Nevertheless, there is reasonable spread of responses drawn from academic staff (22% in sample and 26 % in the population), and TAFE teachers (24% in the sample and 25% in the population).
- Concerning the distribution of responses by major organizational units, there is a distribution of responses with the larger functional groups including TAFE (38% in the sample compared to 47% in the population), and Higher Education (34% both in the sample and population) receiving the higher proportion of responses and support areas (28% in sample but 19% in the population) following; clearly TAFE is under-represented and the support units over-represented in terms of the respondents.
- Most of the responding staff were either full time (72%) or fractional appointments (22%) in keeping with the distribution in the total population. Further sessional/casual staff were not as often on campus and are therefore less likely to respond than the other employment categories. Given the established nature of the University, it not surprising that almost three-quarters of the respondents had worked at the institution for at least three years.
- Most of the respondents were from the main campus (64%) with others spread over the remaining five smaller campuses.

Table 1 specifies the number of respondents who supervise or manage other staff. It reveals that approximately 40% of the staff were in supervisory positions.

Table 1: Supervise or Manage Other Employees

	Frequency	Percentage
Yes	157	42.3
No	214	57.7
Total	371	100

Perceived Frequency of Use of Human Resources Services:

Table 2 below provides Staff perceptions of the frequency of accessing the Human Resources Department services delivery. The following comments are offered on these data:

- The most frequently accessed Human Resources services relate to the Employee Web Self Service where 58% of the respondents used the service a few times a month or a few times per week. A number of services including Recruitment, OH&S, Equal Employment Opportunity and HR Consultancy/Employment Advice were not used very often by the responding staff.

Table 2: Frequency of Use of HR Services

Activity/Function	Never	Few times over years	Few times per annum	Once per month	Few times per month	Few times per week
Payroll & Super						
- Frequency	33	134	106	27	53	12
- Percentage	9	36.7	29	7.4	14.5	3.3
Recruitment						
- Frequency	146	102	65	18	22	5
- Percentage	40.8	28.5	18.2	5	6.1	1.4
Occupational Hlth & safety						
- Frequency	156	119	56	13	7	5
- Percentage	43.8	33.4	15.7	3.7	2	1.4
Equal Emp. Opportunity						
- Frequency	234	97	24	2	0	1
- Percentage	65.4	27.1	6.7	0.6	0	0.3
HR Cons./ Emp. Advice						
- Frequency	157	92	61	16	18	11
- Percentage	44.2	25.9	17.2	4.5	5.1	3.1
HR Website Information						
- Frequency	27	46	102	62	82	40
- Percentage	7.5	12.8	28.4	17.3	22.8	11.1
Emp. Web Self Service						

- Frequency	8	17	52	78	150	64
- Percentage	2.2	4.6	14.1	21.1	40.7	17.3
HR Overall						
- Frequency	8	76	117	61	72	29
- Percentage	2.2	20.9	32.2	16.8	19.8	8

Perceived Satisfaction with Human Resources Department Services

Table 3 below contains the staff perception of the satisfaction of the services provided by the Human Resources Group. The data contained in this Table permits the following observations:

- It is important to observe that with respect to all activities covered by HR, a majority of respondents were either satisfied or very satisfied. But very high satisfaction rates are noted for HR Weekly (91%), HR Website Information (90%), Employee Web Self-service (87%), and Equal Employment Opportunity (81%). Conversely, the greatest dissatisfaction rate is noted for OH&S (25%) and HR Overall (24%).

TABLE 3:   PERCEIVED SATISFACTION WITH HR SERVICES

Activity/Function	Satisfaction with HR Services				
	Very Dissatisfied	Dissatisfied	Satisfied	Very Satisfied	% Satisfied/Very Satisfied
Payroll/Super	20	57	219	52	77.9
Recruitment	20	40	194	37	79.4
OH&S	20	51	193	18	74.8
Equal Employment Opportunity	22	28	198	12	80.7
HR Consultant/ Emp Advice	17	45	167	49	77.7
HR Website Information	6	28	220	74	89.7
Emp Web Self service	10	35	178	129	87.3
HR Weekly Email	7	24	224	76	90.6
HR Overall	23	61	219	39	75.5

Awareness of Employment Entitlement:

Table 4 provides data on awareness of Human Resources Group services accessed by respondents. The following comments are made on the data contained in this Table:

- The greatest awareness of the respondents relate to the agreement that provides for their terms and conditions of employment with 51% being either aware or highly aware.

- The greatest unawareness rate (23%) relates to leave entitlements (including flexible work arrangements).

- Given the relatively large proportion of respondents in the "somewhat aware" and unaware categories, perhaps the raising of awareness in all three areas listed in Table 4 may prove useful to the employees.

Table 4: Awareness of Employment Entitlements/Conditions

Entitlement/Condition	Uninterested	Unaware	Somewhat Unaware	Somewhat Aware	Aware	Highly Aware
Emp. Benefits & Salary Packaging						
- Frequency	2	38	41	122	133	31
- Percentage	0.5	10.4	11.2	33.2	36.2	8.4
Leave Entitlements (incl. flexible work arrangements)						
- Frequency	4	38	45	115	122	40
- Percentage	1.1	10.4	12.4	31.6	33.5	11
Agreement for Terms & Conditions of Emp.						
- Frequency	1	28	46	102	142	45
- Percentage	0.3	7.7	12.6	28	39	12.4

Table 5 below replicates the data contained in Table 4 but substituting satisfaction for awareness. It reveals relatively high satisfaction rates for leave entitlements (87%) and agreed terms and conditions of employment (81%). Clearly the lowest satisfaction rate is noted regarding employee benefits and salary packaging (73%).

Table 5: Satisfaction with Employment Entitlements/Conditions

Entitlement/Condition	Very Dissatisfied	Dissatisfied	Satisfied	Very Satisfied	Satisfied/Very Satisfied
Emp. Benefits & Salary Packaging					
- Frequency	15	74	215	30	245
- Percentage	4.5	22.2	64.4	9	73.4
Leave Entitlements (incl. flexible work arrangements)					
- Frequency	10	34	241	48	289
- Percentage	3	10.2	72.4	14.4	86.8
Agreement for Terms & Conditions of Emp.					
- Frequency	10	53	242	28	270
- Percentage	3	15.9	72.7	8.4	81.1

Qualitative Reponses

Following the questionnaire section on frequency and satisfaction of services, respondents were requested to contribute any comments in relation to the HR services or HR overall. Some of the key themes emerging from the comments include the following:

- o One issue mentioned a number of times by the respondents relates to incoming phone calls to HR. For instance, 'generally can't get phone answered, have to leave messages and have to wait for call back" or "can we get real people answering the phone instead of continually diverting to voice mail".
- o Another theme emerging from the qualitative inputs relate to staff recruitment policies and procedures. Examples of comments include "I find recruitment processes restrictive and cumbersome", whilst another suggests that "University policy on recruitment can mean it is sometimes impossible to place ads in the right spot for maximum reach".
- o Payroll and related accounting difficulties constitute another challenge for some of the staff. For instance, "where discrepancies arise, it would be good if HR staff could take the time to check account codes with departments before processing pays" and "I have made a number of enquiries to payroll over the past few years and the response is always very abrupt and doesn't generally explain how the outcome was reached".
- o The need for HR to embrace a balanced employer/employee requirement was also mentioned by some staff. Examples include "I believe that OHS is a management tool not necessarily in the best interest of lower level staff" and "far too pro-employer, little balance".
- o A further area emerging from the comments relate to the provision of support for casual/sessional staff. For instance, one staff observes that "it is extremely difficult for sessional staff to submit paysheets", whilst another notes "the management of a huge casual workforce is unsupported by current HR department practices".
- o Some believe that a more user-friendly/responsive HR system would be helpful. Observations in this area include "web site needs updating to incorporate changes in payroll tax and recent IR changes", "the leave component of the EWSS can be a bit confusing", and "HR on-line job system is not user friendly".

Staff were also given an opportunity to comment on current employment conditions and entitlements at the University. Some of the major themes noted from these comments include:

- Some staff would like to see improvements to salary packaging and related matters. Examples include "I tried to salary package a car and found it almost impossible to deal with the consultants", "salary packaging has been very badly managed", 'the $250 fee to salary package through NLC is excessive" and "too few salary packaging options have been explored on behalf of the University staff in comparison to other industries".
- A few staff have commented on the perceived relative decline in University employment conditions. For instance, one staff believes that "employee benefits are falling behind some other universities and other states", "in the latest EB outcomes the University's General staff seemed to have a smaller increase in salary (22%) over

the next few years than any other university" and "the newly introduced HEW pay structure does not keep pace with CPI".

- Some staff development related concerns were raised by a few respondents. Examples include "would like more information about what is available to us in the way of fee support for on-going training" and "academic staff get no professional development whatsoever".

Another open-ended question requested staff to identify areas where HR does a good job. Some individual good efforts are noted but the following are a few notable group effort themes that emerged:

- The electronic web-based self service provision was identified by several staff as being noteworthy.
- The weekly email that helps to keep staff informed was identified by some staff as good practice.
- General communication, including the effective response to queries via email, was considered to be effective by some respondents.

Staff were requested to identify areas where HR can improve its service delivery and how this might be achieved. A few of the major areas identified by the respondents include the following:

- Phone being answered by HR staff would be very helpful to their clients. Examples of the responses in this regard include "answer the phone', "have phones answered by looping numbers so other staff members can pick up calls" and "I think a very big improvement could be in having someone always able to answer the phone in HR".
- Placing greater emphasis on the "human" side of the organization. Associated thematic comments include" consideration for all staff as human beings, give priority to the human part of HR", "the staff could smile more", "an annual morning tea to introduce services", "provide more personal response (to queries)", "get out of your office and start meeting your human resource", and "(HR) needs to listen and have empathy for staff".
- Greater offerings of staff development programs may be required. Suggestions include "need more staff development programs- a wide variety of it- not just operational training", "offer presentation skills workshop more often", and "professional development needs to be more than skills training or compliance with legislation".
- Enhancements to HR systems including "EWSS website needs work", and "the EWSS and allowing two different positions to be listed at the same time with the person reporting to listed against the two different positions" (sic).

The final qualitative question allowed respondents to make any further comments on HR. A number of positive comments were received on HR that is encouraging for the future. Some examples include "overall a very professional service", "please maintain the service you provide", "TAFE consultants are fantastic", and "the caliber and skill of the HR Corporate Consultant has made liaison with HR very easy and approachable".

Historical Comparisons:

It is noted that a HR satisfaction survey was undertaken a couple of years ago and accordingly, where possible, some comparisons will be attempted of a temporal nature.

However, it needs to be noted that the latest survey instrument was somewhat different to that used in 2004, meaning that there are only limited areas where valid comparisons can be made over time. Indeed only in respect to satisfaction with activities, the same Likert scale was used in the two HR surveys; even then some of the functional groupings of HR are different, possibly due to organisational changes over the intervening period. Nevertheless, Table 6 attempts to compare satisfaction rates for activities/functional areas in the 2004 and 2006 surveys. The following comments are made on the basis of this temporal comparison:

- Overall the average HR satisfaction rate increased from 80.3% in 2004 to 81.7% in 2006 or by nearly 2%- a good outcome for HR from a temporal comparative perspective.
- Positive trends are noted with respect to a number of activities including HR Recruitment, OH&S and HR Consultants between 2004 and 2006.
- However, some decline in satisfaction is noted particularly in respect to Payroll/Super and Equal Employment Opportunity.

Table 6: Comparison of Satisfaction Rates for HR Services 2004-2006

Activity/Function	% Satisfied/ Very satisfied 2004	2006	% Change in satisfaction
Payroll/Super	86.7	77.9	-10.1
Recruitment	74	79.4	7.3
OH&S	69.5	74.8	7.6
Equal Employment Opportunity	84.2	80.7	-4.2
HR Consultant/Emp. Advice	64.4	77.7	20.7
HR website Information	NA	89.7	NA
Emp. Web Self Service	88.6	87.3	-1.5
HR Weekly Email	NA	90.6	NA
HR Overall	NA	75.5	NA
Average of HR	80.3	81.7	1.8

CONCLUSION

An interesting finding from the study is that the most frequently used service is also the one sustaining one of the highest satisfaction rates, namely, the employee web self service. This is a positive finding for Human Resources in terms of the quality of service delivery. At the other end of the spectrum, occupational health and safety was rated the lowest satisfaction rate but also was not accessed that often- only 3.4% of the respondents used the service a few times each month or a few times per week. However, in absolute terms even in this area the satisfaction rate was around 75%- again indicating a positive result for human resources department. Nevertheless, given the importance of occupational health and safety particularly within a technological university, action plans will need to be developed to improve the quality of services provided in this area in the future.

The survey also provided a wealth of qualitative information that could enhance future planning within the Human Resources department. For instance future enhancements to the Human Resources systems will improve access and functionality of the web-based service delivery. Similarly staff development activities/strategies may require the assignment of greater priority by the HR department in the future. It needs to be acknowledged that higher education is a labour-intensive industry and hence in order to maintain its sustainability into the future, such institutions need to give high priority to the development of its "human capital". The support staff and some academics may require training in terms of certain skills but as suggested by the qualitative analysis, Universities need to go beyond mere training. For instance, academic staff need opportunities to attend conferences so as to not only absorb the latest knowledge developments in their discipline, but also to contribute to the research output of the University via paper presentations, including the inclusion of papers in refereed conference proceedings and the like. Accordingly, it is important that Universities allocate sufficient budgets for such staff development programs.

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