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EDITORIAL

The seven-refereed articles in this issue have been presented to the SEAAIR 2004 Conference themed "Entrepreneurial University of the 21st Century" held at Wenzhou, China in late September 2004. A common denominator, which appears to be able to bring together the varied topics discussed in the articles, is the subject of quality.

Quality, as dealt with in the respective articles, is expressed explicitly or implicitly in the main from the perspectives of generic skills requirement (refer to articles of Sutoko and Faustine, Wang and Chang and McMurray and Sharma), quality assurance methods (articles of Shawyun and Harun), and teaching and learning (articles of Ling et al and Wu et al).

The articles provide interesting reading and reflection for those interested in promoting quality and its sustenance to their organisation.

As part of the continuing service of SEAAIR, the next SEAAIR conference will be held in Bali, Indonesia from 14 to 16 September 2005. The conference theme is "Higher Education Reform: Facing Local and Global Changes". The organisers promised participants that it should be an exciting and interesting learning event for all those who believe that the foundation for quality of life is built from the cement of quality of education.

We look forward to meeting you at the Bali conference.

Editor

Ng Gan Che

Compatibility of Higher Education Program With Professional Employment: a Strategic Perspective on Educational Funding Effectiveness

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Research Background

Raising the issue of higher education program contents into a discussion, the immediate phenomena debated would mostly be on the subjects of the compatibility of the program with the practice at the work place. Secondly, it would be on its influence in the employment. The more compatible the program with the work place, it is perceived as the easier it will be for the graduates to be employed. This employment will "process" the graduates into professionals. In this context, it will not be exaggerating to conclude that compatibility of higher education program contents will be influential to professional employment. Consequently, the easier the graduate of the higher educational institutions be employed, the more effective the funding.

What emerge in the general perceptions are:

?? People perceive that the knowledge acquired in higher education institutions is not applicable in the workplace. Many people say that the theory is not practicable in the work place.

?? Experience and knowledge are acquired merely from the workplace, rather than from higher education institutions. This can be seen that companies normally train the students first, before they can be employed. That was why, when the graduates apply for jobs, the employer let them be trained before they jump into the job, under three months probation. This certainly gives several effects on financial rewards, such as: lower salaries for students who are just graduated and are still under probation, compared to the ones who have been in the job for a longer term.

?? The costs spent in higher education to acquired knowledge through the program content, is much higher compared to the income gained by the students in their early 5 years after they graduated. This is perceived as inefficient in the expenses for the funding.

Focus of Study

Based on the general perceptions at the research background, applicability at the workplace of knowledge acquired in higher education, as well as the experience and knowledge acquired at the workplace, are both rooted at the compatibility of higher education program content with professional employment. Whereas the other general perception is concerning more to the effectiveness of educational costs spent in acquiring knowledge.

Therefore, this study focuses on:

- ?? The compatibility of Higher Education program content with Professional Employment.
- ?? The educational funding effectiveness in Higher Education

Objectives of the Study

It cannot be denied that education is influential to the way of thinking of human being. The higher the level of education, it is expected that the higher the knowledge is acquired. It is not just acquiring tacit knowledge which is mostly about things good to know, but it is also expected to acquire functional as well as contextual knowledge that is developed and then embedded in the brain-ware. In this way, knowledge acquired by the actors in the companies can become an important asset in the establishments of knowledge enterprises, especially in the global competitive information era.

Therefore the objectives of this study are:

1. To find out whether the knowledge acquired in higher education, are compatible with the ability to overcome work challenge in the enterprises as the professional employments providers, from the point of view of the stakeholders of higher education.

2. To find out whether the current curriculum provides the experience needed by professionals to execute their tasks or to anticipate work challenge, or whether the work experience is provided at the workplace?

3. How do professionals with higher education backgrounds perceive about the knowledge acquired from higher education?

4. How do professionals think about the respects earned from the enterprises in regards of their technical competence acquired in the educational institutions, compared to their work experiences earned in the enterprises?

5. To fund spent by families as well as government in higher education compared to the suitable area of work obtained in the workplace, which correspond to the compatibility of jobs and the study background, from the economic perspective.

6. To trigger further empirical research in the areas related to the compatibility of education program contents to professional employment.

Theoretical Background

Knowledge is a self-evident concept. In philosophy it is a subject most debated epistemologically. One keeps turning around the circles when a tautological question: "Do we know what knowledge is?" because the word 'know' presupposes knowledge (Hertog & Huizenga, 2000).

The subject of this study is primarily on the practical issues of a higher education program content, in its relation to the professional employment in the workplace. Therefore, we define 'knowledge' at its practical points of departure.

The definition of knowledge in this study is the combination of:

1. Functional knowledge, which is based on various area or disciplines which knows the 'what' and the 'why' (Kogut and Zander, 1992), which maybe scientific or technological such as physics or electronics within research and development. It may also be various functions in business organizations and their environment, such as management, marketing, accounting, production, which knowledge supply comes from various organizations such as institutes, universities, or professional organizations.

2. Operational knowledge, which is primarily based on action, which is developed through action and experience, which fulfil the knowledge of 'how' as the central of operational knowledge. This is particularly about gaining knowledge through 'learning by doing' things.

3. Contextual knowledge, which is concerning with knowledge in a specific market, such as familiarity of marketers with the culture of their customers in different countries. Thus, contextual knowledge is strongly linked with the culture where products and services are delivered. Along with this knowledge, to know 'where and when' has also to be considered for their interactions with the 'how'.

Based on the above explanations, the definition of knowledge is: the strategic meanings of functional, operational, and contextual knowledge for organizations, which fulfil consecutively the answers to 'what and why', 'how' and 'where and when', derived from higher education program content, in its relation with the need of professional employment at the workplace.

The quality knowledge acquired of any higher education institution can be measured by the compatibility of professional's acquired knowledge from higher education, with professional placement in enterprises.

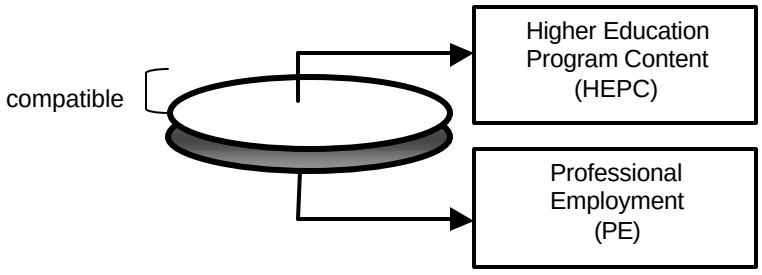

Figure 1: Compatible HEPC and PE

Consequently, this compatibility will perform in various manifestations, as well as consequences, such as:

?? The ability of professionals in executing their tasks in the jobs, by applying the knowledge they acquired from higher education, in forms of functional as well as contextual knowledge.

?? The willingness of enterprises to recruit professionals graduated from higher education.

?? The willingness of enterprises to reward the professionals with satisfactory remuneration.

?? The good image of higher education institutions being the source in providing applicable research which will generate competitive advantage to the enterprises.

?? The amount of income spent by the families to acquire knowledge in the higher education.

?? The compatibility of families' spending in education to the employment possibility.

?? Income generated by professionals in the macroeconomics, which will enable the cycle of production, consumption and the expenditure of the income, which will make the economics system works.

?? Social capital in the society, as the consequence of a good higher education, that generates better educated society, which will enable the establishments of knowledge enterprises in the global business (Hertog & Huizianga, 2001), as a social virtues that will enable the wealth creation of the nations (Fukuyama, 1995).

Nevertheless, there are incompatibilities, which apply in the workplace. They can come in these two forms:

1. Higher education program contents fulfil only part of the needs in the professional employment, which can be illustrated as follows:

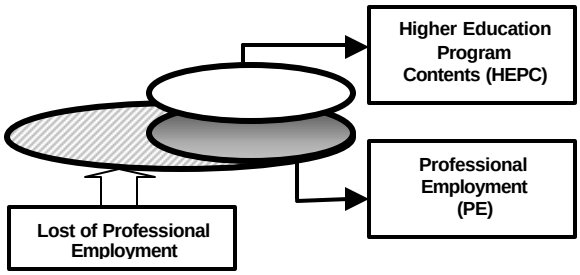

Figure 2: HEPC fulfil part of PE need

2. Higher education program contents provide unrequired professional employment needs, which can be illustrated as follows:

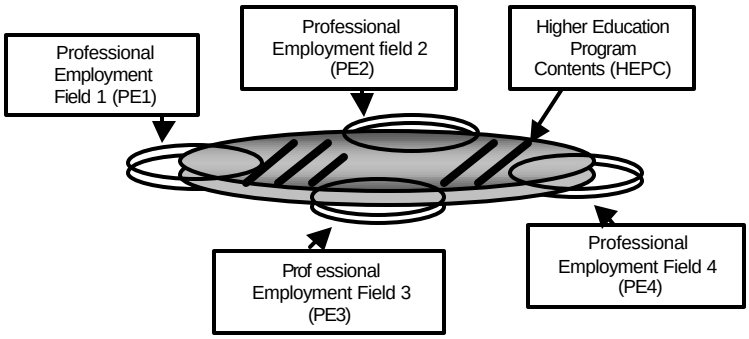

Figure 3: HEPC fulfil part of PE need and unrequired HEPC

Research Methodology

This study utilized part of 877 sets of responses from the 1120 sets of survey sent to 31 business entities done in 2002. The target companies were of medium, large sized as well as conglomerated enterprises in Java, Bali and Sulawesi islands, owned by private families.

The Likert scaled data taken from the responses are processed and analysed by using SPSS 12.00 software. This procedure resulted in the descriptive statistical frequencies of the data, related to the research focus. The results are then compared and contrasted, so that the overall findings can be compiled into the topic area of the research focus.

Data of educational backgrounds from the respondents as well as their position obtained in the company are also analyzed. The purpose is to have a stronger point on the conclusion that has to be taken out of the research, thus implications as well as further studies can be suggested.

Further to this procedures, using data generated from the ADB research done on the Financing of Education in Indonesia, costs of funding in higher education area calculated and estimated for its effectiveness, in term of the income generated by graduates when they are assumed to be employed in the workplace, compared to all the estimated expenses in the same 5 years' time spent in the workplace as well as in the higher education in acquiring knowledge.

Based on all the findings and analysis of data of expenditures in higher educations, conclusion, implications and further research suggestions are then cited consecutively.

Data Analysis & Findings

Processed data are grouped into these categories with the tabulated results as follows:

1. Acquired Compatible Knowledge from higher education, which generated from 2 responses and illustrated as follow:

    (a) Ability to overcome work challenge with competencies acquired from higher education, and

    (b) Owning competence to overcome work challenge.

Data collected from responses on Acquired Compatible Knowledge give indications of a median Likert scale 4, which means most of the respondents (which are over 70% of total respondents) agree that they acquired compatible knowledge from higher education. This finding is based on the organizational members toward their own compatibility of knowledge acquired from higher education.

Table 1. Acquired Compatible Knowledge

Acquired Compatible Knowledge	Ability to overcome Work Challenge with Competence Acquired			Owning Competence to Overcome Work Challenge		
	Likert	Frequency1	Percent1	Likert	Frequency2	Percent2
Valid	1	3	0.34	1	3	0.34
	2	38	4.33	2	48	5.47
	3	198	22.58	3	220	25.09
	3.74	13	1.48	3.71	1	0.11
	4	**564**	**64.31**	3.73	14	1.60
	5	61	6.96	**4**	**539**	**61.46**
	Total	877	100.00	5	52	5.93
				Total	877	100.00

2. Perception on Having Compatible Knowledge from Higher Education, which corresponds to and illustrated as follow:

   (a) Perception of "Having Sufficient Knowledge to Execute Tasks at Work", and

   (b) Perception of "Having Latest Knowledge Needed by the Company".

Table 2. Perception on Having Compatible Knowledge from Higher Education

Perception on Having Compatible Knowledge	Perception of Having Sufficient Knowledge to Execute Tasks at Work			Perception of Having Latest Knowledge Needed by the Company		
	Likert	Frequency	Percent	Likert	Frequency	Percent
Valid	1	11	1.25	1	8	0.91
	2	131	14.94	2	181	20.64
	3	296	33.75	**3**	**412**	**46.98**
	3.34	16	1.82	3.1	17	1.94
	4	**394**	**44.93**	3.71	1	0.11
	5	29	3.31	4	236	26.91
	Total	877	100.00	5	22	2.51
				Total	877	100.00

The median of the responses on the Perception of Having Sufficient Knowledge to Execute Tasks at Work is at the scale 4, which represents about 48% of the respondents who agree to the perception. Whereas on the Perception of Having Latest Knowledge Needed by the Company, the majority of the respondents are disagree or mostly cannot agree nor disagree on this issue. It indicates the doubts of respondents and also the tendency to disagreements, if we analyze that the majority of the responses fell into the disagreed polar.

Learning from Work, which related to the responses and illustrated as below:

   (a) Ability to Develop Knowledge at Work to Anticipate Work Challenge in the Future.

   (b) Advantageous Professional Experience Obtained at Work

   (c) Learning a lot from Work Experience

   (d) Tasks and Jobs in the Company bring Valuable Work Experience

Table 3. Learning from Work (1)

Learning From Work	Ability to Develop Knowledge at Work to Anticipate Work Challenge in the Future			Advantageous Professional Experience Obtained at Work		
	Likert	Frequency1	Percent1	Likert	Frequency2	Percent2
Valid	1	3	0.34	1	6	0.68
	2	50	5.70	2	58	6.61
	3	210	23.95	3	198	22.58
	3.71	19	2.17	3.71	15	1.71
	4	**530**	**60.43**	**4**	**516**	**58.84**
	5	65	7.41	5	83	9.46
	Total	877	100.00	**Total**	876	99.89
				System	1	0.11
					877	100.00

Responses to the issues that knowledge is gained from Learning From Work, the median of responses to Ability to Develop Knowledge at Work to Anticipate Work Challenge in the Future, as well as responses to Advantageous Professional Experience Obtained at Work, over 60% responses fall into the median of Likert scale 4 and 5, which means the respondents agree on the learning is obtained from work.

The same finding is with responses to point c. and d. above, the respondents seems agree that learning is more from work, rather than in higher education program, as per details shown on the below table.

Table 4. Learning from Work (2)

Learning From Work	Learning a lot from Work Experience			Tasks and Jobs in the Company Bring Valuable Work Experience		
		Frequency3	Percent3		Frequency4	Percent4
Valid	1	2	0.23	1	2	0.23
	2	22	2.51	2	24	2.74
	3	126	14.37	3	134	15.28
	3.71	1	0.11	3.71	1	0.11
	3.91	15	1.71	3.91	16	1.82
	4	**609**	**69.44**	**4**	**593**	**67.62**
	5	102	11.63	5	107	12.20
	Total	877	100.00	**Total**	877	100.00

3. Company Respect on Employee, which responded to the following points:

   (a) Company Respect on High Technical Competence

   (b) Company Respect on Work Experience

Table 5. Company Respect on Employee

Company Respect on Employee		Company's Respect on Work Experience			Company Respect on Work Experience	
		Frequency1	Percent1		Frequency1	Percent2
Valid	1	63	7.18	1	3	0.34
	2	358	40.82	2	48	5.47
	2.73	13	1.48	3	220	25.09
	3	235	26.80	3.71	1	0.11
	4	184	20.98	3.73	14	1.60
	5	24	2.74	4	539	61.46
	Total	877	100.00	5	52	5.93
				Total	877	100.00

Finding from data analyzed on responses to the questions of Company Respects on High Technical Competence shows the median of responses to disagreement. Whereas towards Work Experience from other work or from the previous work the respondents have done, the result shows company respects on it. This finding can be interpreted as the tendency of the incompatibility of technical competence of the employees, which is supposed to be acquired in the higher education program. Details of the data analysis are as is compiled in the Table 5.

Data of Graduate Employments in the 31 companies

The findings, which indicate the incompatibility of the higher education program with the professional employment, need to be analyzed further. The result of the data after classifications and compilations come to the details as shown below:

Table 6. Matrix of Education Background and Position Obtained In Professional Employment

Position Obtained in Professional Employment	Managerial	Secretary	Marketing	Accounting, Cashier	Staff, Administration	Supervisor, Production, Operator	?	Total	Pct
Social, Political, Law	10	1	2	2	7	19	0	41	9.40
Economics, MBA	43	8	11	16	38	45	12	173	39.68
Engineering, Science, Mathematics	32	0	2	5	10	77	1	127	29.13
Agricultural Studies	5	0	2	2	3	0	0	12	2.75
Psychology, Behavioural Science	3	0	0	0	4	2	51	60	13.76
?	3	4	0	3	4	8	1	23	5.28
							Total	436	100%

Hypothesis of Compatibility of acquired knowledge with professional employments seems to be unproven for the study background in economics, management, and business and administration studies, as well as for engineering, science, and mathematics. The compatibility in this study was proven about 68 percent of the respondents are getting the relevant jobs in their professional employments.

However, there are 32 percent of the other subject studies which shown incompatibility in their professional employments. These findings emphasize the preliminary perception about the focus issue of this study. Therefore, a further exploration on studying the effectiveness of expenditures in entering higher education as oppose to working is worthwhile to be done, in order to see further the impacts, which may arise, due to this incompatibility.

Expenditures in Indonesian Higher Education

For the purpose of calculating the expenditures in Indonesian Higher Education, figures of costs used in this study is based on the pessimistic calculation, that is to utilized the 1995-1996 data, of the research done on the Financing of Education in Indonesia.

Table 7. Cost of Studying in Higher Education and Source of Funding

Source of Funding	Cost of Studying in Higher Education (in Rupiah)	Income of Working in Enterprises (in Rupiah)
Family :		
Bachelor of Art = 500.000	500,000,000,000.-	375,000,000,000.-
Public H.E. = 853.000	2,021,610,000,000.-	4,265,000,000,000.-
Private H.E. - = 1.450.000.-	6,090,000,000,000.-	4,640,000,000,000.-
	8,611,610,000,000.-	
Government:		
Recurrent+Devlp. In Public HE	6,851,650,000,000.-	
Recurrent+Devt. In Private HE	296,885,000,000.-	
	7.148.535.000.000.-	
Within-Institution:		
Fees+Other in Public HE	1,189,150,000,000.-	
Fees+Other in Private HE	15,513,590,000,000.-	
	16,702,740,000,000.-	
Grand Total	**32,462,885,000,000.-**	
	9,280,000,000,000.-	**9,280,000,000,000.-**
Approximate Inefficiency: (in every 5 years)	**23,182,885,000,000.-**	**~ US$ 2,520,000,000.-**

Sources: (a) Clark, Hough, Pongtuluran, Sembiring, Triaswati (1998), Financing of Education in Indonesia, Asian Development Bank Comparative Education Research Centre, The University of Hong Kong.

(b) Random sampling on favourite and non favourite private higher education tuition fee, and average salaries gained by graduates and bachelor of arts in the workplace (Petrina Faustine, 2004).

S.A. Chowdury supervised the research team and Asian Development Bank and Comparative Education Research Centre at the University of Hong Kong published the report in 1998. We purposely used the pessimistic calculation, which was based on the exchange rate of Rupiah 2,190 per United States Dollars. This is to prevent a ballooning amount, when the real cost is calculated. However, to know the current costs, a multiplication of 5 times of the Rupiah would be sufficient.
Looking into this huge amount of funding, which is assumed to have been wasted, it is not too exaggerating when we suggest that this finding could be a trigger for more in depth research. This is to obtain better results before taking any remedial actions on the predicted issues.

Conclusions

The study shows there are indeed tendencies of incompatibility of higher education program contents and professional employment. Although it is not significantly high in the percentage, a more in depth research may give even more surprising findings, than what has been revealed in this study.

We might have never realized that higher education funding involves such an enormous amount of funding, derived from the family, government, and other institutional sources such as World Bank, ADB, IDB and also other social institutions which donation can be an extra to the calculation. Therefore, an effective as well as careful utilization of the funds available should be decided with full considerations of the maximum advantage, at the strategic perspectives from macro economy point of view.

Implications on Higher Education Program

Based on the findings on the company respects of work experience, as well as the learning at the work place, the implications on higher education program can be on:

?? Work integrated learning in higher education, in order to met the needs arise in the professional employment, as oppose to the acquired knowledge from higher education program.

?? Higher Education Program Content should give alternatives to enable students to pursue further academic studies after high school. This will give the possibilities to do practical studies for both undergraduate and postgraduate studies. Linkage with industries for internships would be beneficial for both

the higher education institutions as well as the students and the companies for recruitments of talented students who meet the needs of the work place.

?? Effects of Professional Employment Needs and Funding Effectiveness on national macro-economy, should be viewed in their strategic perspectives to the maximum benefits of a nation. These factors need to be taken seriously into considerations, when designing higher education program, so graduates can be a source of income producers, which will multiply the effects on the macro economy-wise.

Recommendations for Researchers

This is an exploratory study. Therefore, a more in-depth empirical research should be conducted, especially on the following issues:

?? Classification of the higher education programs in further studies, to be defined more accurately

?? Factors influencing professional employments of graduates from higher education, as well as choices of graduates in the professional employments, are both to be explored from various perspectives

?? Needs of industries or the workplaces are to be defined more clearly, in order to enable a feasible program design of higher education, which can absorb the funding effectively

?? Create effective models of higher education funding from: family, government and other institutions, in response to the quality of graduates required in the workplace.

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The Implementation of Business Management Strategies in Extension Education in Taiwan

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Introduction

The lifelong education concept has been promoted by international organizations since the 1960's. From this time, the importance of lifelong education has been steadily increasing. Lifelong education has not only become the major concern in many country education policies, but also has great impact in the education reform and promotion of extended education. Driven by recurrent and lifelong education, college education in many Europe and American countries has gradually been dominated by adults. The extensions in college education have extended the original abnormal characteristics to become the important place for lifelong education of adults. (Tsai, 1999)

Previously, extension education was only on the sidelines of education. Public universities did not actively participate in extension education. Some private universities then actively increased revenue with promotion of extension education. Therefore, people will have a vague impression of the meaning and objective of university extension education. In recent years as the call for education reform has gathered steam, MOE has begun promoting lifelong education and set 1988 as the "lifelong education year". It has promulgated " Approaches for University to Extend Education", which has clearly regulated the definition, types and implementation methods of university extension education. With the implementation of the rule that public universities must raise funds themselves, extension education must become the field that universities cannot neglect. (Tsai, 1999)

According to the investigation result of Cheng Tsan-Yuan in 1998, there are 231 adult education or extension units in 80 universities in Taiwan that partake in adult extension education. As the extension characteristics of adult education are different, the adult and extension education classes were classified into 19 types in majors, the majority being languages, followed by agriculture, business, and computer application. From the material of extension education classes, we have found that most adult and extension education units are providing classes that match the characteristics of the units. In general, it provides various and different degrees of classes to different people. It has the course-planning phenomenon of variety and work division.

SWOT Analysis

The demands of consumers will change with the influence of the general environment. Therefore, if organizations are to determine and satisfy the demands of consumers, the marketing management must analyze resources. By comparing the advantages and disadvantages of the organization with those of competitors they can then decide how to effectively use the resources and create the greatest value for consumers. When marketing managers analyze the resources and environment, they use the famous SWOT analysis in marketing. S means Strength; W means Weakness; O means Opportunity; and T means Threat. A clear SWOT analysis can help the university extension unit to segment the market, discover the target learner, and design the suitable marketing mix and solution. (Teng, 1998)

Strength -- Lifelong education role

With the development of science and technology and changes in society and economic structure, the learning desires of people are very strong, The continuing education opinion that education and learning are on-going, has become the common knowledge of the social masses (Huang, 1999). Therefore, adult education in university has become the mainstream of the advanced education system (Munger, 1986).

All universities are expanding the role of providing lifelong education, with all departments providing trans-department adjustment. In the future, it will assume the role of an academic leader (Cheng, 2004). The role of extension education is to teach the masses practical knowledge transferred from research, which can be accepted by common social masses. In this way, common social masses have their requirements fulfilled (Lin, 1997). Learning is also a process that will continue for a lifetime. All people must continue to study in each stage of their life. As the workers must promote the labour productivity and competitiveness to increase new working skills with the change of working market, the education and training opportunities must continue lifelong (Tsai, 1999). In addition, adults have rich and various experiences. If the course can evaluate relevant working and life experience and give credits, it will become an attractive factor. (Huang, 1997)

Weakness

The current situation of Taiwan is that in previous times, the extension education of universities was aimed at mainly providing non-normalized education to the social masses. The guidance of government policy has always put emphasis on normal education. However, as there are constraints on the admission examination for evening classes of normal degree university courses, there are only 10% of adults joining the courses. Extension education receives very few subsidiaries from the government with no encouragement and no opportunity for full development.

Additionally, universities in Taiwan have the following problems in the development of extension education:

1. Blur concepts: As for the current education system, the biggest shortcoming was that normal academic education did not differ with the professional education extension. For example, both the university and independent institutes had master and PH.D for academic classes, it also had the evening classes of extension education, as well as short-term professional courses, including from languages to computer. What is the focus of the universities? (Lin, 1997)

2. The organization structure of the extension education organization is not stable.

3. Personnel and finance are the main factors of the stability of the organization. Within personnel, the further education departments had no specialized personnel and all staff came from the current working staff of the university. (Lin, 1997)

4. Attending school for study: As students must go to a certain location for study, barriers may be created against the participants. Therefore, convenient location and times were the main factors considered. (Yang, 1996)

5. The course and scheme are mainly affected by the organization characteristics of the promotion units, university environment characteristics, but not the strategic choice result of the promotion units (Cheng, 1998).

6. As the market governs the growing popularity of education, high education is facing a development crisis.

7. The tuition system of the university extension has problems of both "profit for school" and "social responsibility", with the crisis of making education a commodity.

8. The rules and regulations of university extension education vary in regulation and openness. (Cheng, 2004)

The current status of education promotion implementation will be analyzed and examined in administration organization, education methods, courses and teaching material, and professional personnel. This is explained below (Tsai, 1999):

1. **Administration organization**: Administration organization of current promotion education is not complete. The levels are low and it is deficient in personnel, this means that the functions are not clear and have omissions.

2. **Education method**: The adult further education department has different learning characteristics within the daily university departments. If university teaching does not have any effect on the university students, adult students will feel frustrated. If the teaching contents are too academic, adult students will feel they are not practical, and the willingness to learn will wane. This is often the case in extension.

3. **Courses and teaching materials:** Current college education courses and teaching materials are provided by the current university courses of the

organization. There are few that can comply with demands of the students and do not reflect upon the characteristics and demands of the community.

4. **Professional capacity**: Extension education personnel in the universities, including administration personnel and teachers, lack the professional capability of adult education, and will hinder the extension education.

Opportunity

1. **Lifelong education:** At present, knowledge develops with each passing day. "Lifelong Education" has become the objective for modern people to continuously fulfil themselves. With the increasing population and concepts of recurrent and lifelong education becoming popular, there is a tendency that adults will further their studies by attending university. Therefore, with the amendment of government high education policy, university extension education has become the important channel of developing social service functions and establishing a lifelong educational society. (Huang, 2002)

2. **Social changes:** Countries in the world now pay more attention to university extension education. Influenced by the concepts of lifelong and recurrent education, the number of adults participating in university education has greatly increased. This is especially true in those countries highly developed in education. (Huang, 1997). Take the general environment of university extension education in Taiwan as an example. In recent years, with the development of IT (technical environment), aging society (demographic and economic environment), and MOE encouraging universities to promote extension education (social and legal environment), the number of adult students has greatly increased. This has created the development opportunities of extension education. (Teng, 1998)

3. **Technology development:** The rapidly changing media allows universities to carry out the extension education. Advanced technological media is used to overcome the time and space limitations and gain advantages in furious market competition. For example, international academic networking can be used to overcome the time and space barrier to shorten time and distance when obtaining information. Those channels have also brought more convenience to the compiling of teaching materials and data resources. (Lin, 1997)

Threat -- Competitive Pressure

In Taiwan, as the concept of lifelong education has just started to gain the attention of MOE, it is listed as one of the focuses of education reform (Tsai, 1999). However, with the development of globalization and Taiwan's entry to the World Trade Organization, future higher education will become more open and people will experience greater opportunities in receiving education. Therefore, university extension education will face more furious competition, even from other countries. (Lin, 1997)

Additionally, overseas universities have gained rich experience and theories in university extension education. Therefore, if the new-born university extension units have not prepared themselves well and found countermeasures for the time of lifelong education and the challenges of foreign education organizations, they will face elimination. (Tsai, 1999)

Marketing Mix Analysis

The word "marketing" contains extensive meanings; the definitions by scholars are all different. Brown (1984) believed that marketing included the complete process of consumer demands, development and implementation solution. Thus, the marketing solution is successful if the demands of consumers are satisfied. Hung (1997) concluded the core concepts of marketing should include all activities such as product development, channels distribution, pricing and promotion. We generally call those activities marketing mix.

The purpose of marketing activities is that through the matching of marketing mix we create value and satisfy consumers' demands. Marketing must have a market where the buyers and sellers can transact. The function of marketing is to guide the financial resource and services so that in the process of exchange between buyers and producers, demand and supply are effectively matched to maximize the satisfaction degree. We learn from the above definitions that marketing is different from sales and promotion. Sales and promotion are only one stage of marketing, but marketing is a complete process to satisfy the demands of consumers. Through the marketing process, social resources can be effectively utilized to create huge social values.

Huang (1994) points out that any adult education scholars believe that the university extension should take the demands of the masses as the core. Therefore, admission conditions, course contents, teaching method, or evaluation method should all be flexible to serve the demands of adult students. Hu (1996) thought that the biggest difference of extension education and normal education was that it did not focus on organization, teachers or subject contents. In contrary, the design of extension education should fully consider the demands of learners. It then provided the technology and knowledge that is required to serve their needs.

The extension education theory with students' demands as the core, matches the concepts of marketing orientation. Strategic marketing planning procedure not only facilitates the universities into providing appropriate courses so as to serve the needs of the masses, but also improves the learning interests of people, increasing the number of adult students. Therefore the exchange of knowledge and experience can bring these effects into full play, fulfilling the function of popularizing education and serving society. (Teng, 1998)

Although the word "marketing" has origins in the commercial environment, Huang (1997) and Karen (1995) have applied the theories and experience developed from marketing to the educational environment. The purpose of the article is to discuss how universities can plan extension education from the perspective of strategic marketing. The article will then explain the meaning and functions of marketing, demonstrating the steps of strategic marketing by bringing extension education functions into full

play, serving the needs of learners and fulfilling the objective of maximization of social value.

Therefore, from marketing concepts, extension education can be decomposed into four factors: product, price, promotion and place. As the four words of the factors all start with P, we can call it 4P model. All marketing strategies and solutions change from the marketing mix of 4P (Teng Wei-Cheng 1998). We discuss the factors as follows:

Product

In recent years, extension education has been affected by adult education, philosophy and the establishment of various extension education institutions. With increasing social demands, all classes have rapidly grown (Lin, 1997). Classes set by the current extension education organization can be classified into the following types, according to the times that courses were provided.

1. Evening Class: The popular method for adult further education classes is to hold them in the evening in Taiwan.

2. Weekend class: Adults can use their afternoon time, Saturday evenings and the whole of Sunday to further their studies. The class can help those who cannot study on weekday evenings, or those that live far from the education location and cannot go back every day.

3. Summer Vacation Class: This class is mainly for teachers who have winter and summer vacations for further study.

4. Education in the air: Education in the air is the most feasible method for students who do not want to be prevented by barriers.

5. Short-term intensive class: Commercial society lays great emphasis on efficiency. Some organizations have launched short-term research classes. In one day, one week, or one month, the whole course is lectured. This type of class is very popular in non-credit classes, and worth advocating. (Yang, 1996).

Price

Tuition includes tuition cost, discount or payment method. The most popular method to calculate tuition is Break-even point analysis. Firstly we must analyze the cost and expenses incurred in one by one course. This includes fixed cost and variable cost. Fixed cost is the expense that will not change with the number of students, such as hour expense, advertisement, and facility depreciation. Variable cost means expenses that will change with the number of people, such as paper handout expenses and food. Break-even analysis will help the planners in understanding the relationship between tuition revenue and the number of people.

Currently MOE does not have tuition standards for extension education. National universities are under pressure to raise 20% of the expenses by themselves. Therefore, some schools separate the corporation economy credit classes for high credit tuition.

However, there are still many people who are eager to attend (Chang, 1997). Therefore, high tuition cost will not prohibit students from enrolling in the class. Additionally, in order to encourage learners in advance enrolment and control the numbers of students in advance, thereby reduce marketing expenses, universities can adopt the method of reducing miscellaneous expenses. Although the payment method is not the main consideration of students, some universities have begun a credit card payment method for paying tuitions and miscellaneous expenses. (Teng, 1998)

To those non-credit classes, expenses are lower or similar to the courses held by general institutions, because universities can fully utilize the existing facilities and teachers. The expenses are determined mainly, by course types and duration. Generally, expenses range anywhere from 2,000 to 3,000 or even 6,000 to 7,000NT Dollars. Credit expenses and miscellaneous expenses range from 1,000 to 4,000 NT Dollars. (Liu, 1996)

Promotion

In extension education, the main purpose of promotion is to effectively transmit course information to the learner, attempting to influence their choice. The channels for transmitting information can be classified into advertisements (newspaper, TV, magazine, carriage, and internet), news, DM, personal introduction, posters, and fax. Before determining the publicity channels, we must understand the most frequently reached media and habits of the target consumers. Only by understanding the consumers, can we make publicity to the maximum effect within the limited budget.

For realization of the propaganda effect, we can consider extensiveness and time. Extensiveness means how many target consumers can reach the information that universities intend to transmit. This is to increase the impression of the consumers and to encourage enrolment. In addition, the specific marketing plan shall be made according to marketing strategies. On the planning process, we must master the time schedule factors. If promotion time is too short, then the effects will be negative. (Teng, 1998)

Place

For part-time learners, location is the main factor considered that affects their intention of signing up. Some students only select the university that is near to their office or home. Classroom facilities and personal service are the important factors that will affect the satisfaction degree of students and decide whether or not they will continue to purchase or introduce others to enrol.

Some universities thought that the job of marketing was to recruit students. They neglected the service quality once the students attend school. The public appraisal of the universities was poor. This will not only affect the students' intentions in signing up, but will also cause to the loss of previous students. Therefore, when promotion units are making marketing strategies, they must understand the demands of the target consumers and the dynamics of the competitors to make optimal choices. (Teng 1998)

Additionally, some extension education of universities has formed strategic alliance with public organizations and private enterprises to realize a win-win situation.

Conclusion & Implication

From the study results, after we analyzed the perplexity of the further education development, we need to further discuss feasible counter strategies as follows (Cheng, 2004):

1. The development of further education shall connect vertical and horizontal systems, and establish clear connection relationships.

2. Education development strategy oriented with lifelong education must consolidate and relate to relevant policies of the adults and advanced education. This will form a leading and foreseeing university adult education development strategy that is oriented with lifelong education.

3. The high tuition system of university extension education shall provide high quality effects and services to learners, education products, and university finance.

4. According to the characteristics of the universities, MOE shall subsidy a certain proportion of expenses in promoting the community service of the university, alliance of university and industry, the alliance among universities, and public service development of universities.

5. The department of universities shall provide a certain proportion of expenses to enhance public topics and multi-culture courses to avoid the loss of function of social responsibility, culture protection and respect.

6. In organization, various forms of learning stations shall be set up to be closer to the market and the resources.

7. In human resources, a special training centre for administration executives and teachers' professional capability promotion committee shall be established to avoid the issue of inadequate expertise.

8. In performance evaluation, we shall establish clear evaluation indicators and pay attention to the forming of individual characteristics and qualified indicators

9. In order to smoothly complete university courses, the university must develop preparation courses to help those adults who left school a long time ago to acquire the capability of learning. The preparation courses shall enhance their language capability, reading capability, and mathematics capability.

10. Credits for adult education shall accumulate without time limitation to obtain the degree. All credits from all universities shall be acknowledged. Therefore, a credit acknowledgement and accumulation system shall be established.

11. The will be various types of university extension education. In addition to face-to-face education and outside university education, distance learning is becoming more common. With the development of science and technology, distance education has developed from mail, TV, and radio to computer networking. It not only breaks the constraints of time and space, but also makes the interactions between distant teachers and learners instantaneous.

12. While encouraging adult education, we must also pay attention to the fairness of opportunities. The implementation of extension education shall not become the privileges of the middle class. Therefore, some nations shall establish laws or regulations so that the university education opportunities will assist socially vulnerable groups. This is the embracement of protection of learning rights in lifelong education theories.

13. Universities start to pay attention to the research of adult education to improve the effects of adult learning. In the UK and the USA, adult education, which derived from university extensions, has gradually become an academic study, and has trained many adult education professionals. With the development of the profession, and research gradually gaining focus, the arrangement in extension courses, education methods, and teaching materials can continue to improve.

14. Flexible education system: When we shall increase part-time and distance education degree courses for adult further education, we must make the study system flexible, so that adults can study according to the time and needs of themselves, as they still work and raise families, therefore, universities shall increase more part-time education and distance education methods. Part-time education systems usually limit the credits that learners can obtain in one term, but do not limit the years of study. Distant education courses will make it convenient for learners everywhere, at any time, and teachers will provide self-study teaching materials for them. (Tsai, 1999)

In addition, Yang (1996) suggested that universities should set up special units responsible for the professional implementation of adult education. A good organizational design will facilitate the implementation and control of marketing plans. In organizational designs, there are often two methods. One is function-oriented, and the other is product-oriented. In the function oriented school organization, the course design is often responsible for the “courses planning group”. The administrative structure includes a division for education, a division for general affairs, and counter administrators. (Teng, 1998)

On the other hand, although all domestic schools do not have uniform practices regarding extension education held by teaching staff, the difference is especially large between private and public universities. We believe that in order to promote the development of extension education, we can start with the following directions:

1. To promote the professional quality of teachers and executives - With the fast development of extension education in all universities, and the government policy for recurrent education, we shall plan to handle the training of various professional personnel and extension education teachers.

2. To promote that all universities pay attention to human resources development such as the overview, evaluation, and praise of the human resource development performance in extension education organizations of the universities.

3. All universities should publicly acknowledge and credit teaching staff, who perform well in extension education. For example, the extension education teaching shall be listed in the criteria for promotion of teachers. At the same time the relevant research on extension education is to be encouraged. There should be an optimal student class size for each subject.

   The salary of lecturers and executives should be indexed annually based on the CPI. The hourly pay of teachers and executives should be improved. Professional staff should have performance appraisal and those who have outstanding performance should be rewarded with bonuses. Executives who are working on holidays or have evening duty should be given high flexibility in return.

   Temporary staff should a secure salary and benefits structure so as to encourage them to stay in the system. Staff benefits system such as insurance, holiday and retirement pensions should be established so that temporary staff will not feel insecure.

4. To increase the extension professional teachers recruited by universities and improve the recruitment procedures of part-time teachers and external teacher resources.

5. To utilize teaching technology such as distance education or even Internet education to reduce the burden of the teachers, reduce the transportation time of teachers and students, and provide flexible study options. (Huang, 2002)

In general, the university extension education in Taiwan relies on the cooperation and assistance of higher education and adult education sectors. These sectors examine the existing problems and difficulties from the perspective of implementation and put forward effective strategies. Only through continuous efforts and improvement of the extension education sector could it face the challenges and changes of the growing number of adult students in higher education and find a suitable development direction for Taiwan's higher education. (Cheng, 2004)

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"Quality Assurance and Strategic Implementation in educational institutions: A Holistic Alliance?"

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Introduction

Since the enactment of the 1999 Education Act B.E. 2542 (ONEC, 1999), the momentum of the QA movement in the education community in Thailand has been dynamic but there appears to be a lack of the "big picture" of an integrated performance management model that emphasizes on continuous improvement and the integration of quality assurance into the strategic planning aspect in a higher education establishment. We have the ONESQA (Office of National Education Standards and Quality Assurance), a public organization looking after the external assessment of all academic institutions with its 8 sets of KPI (Key Performance Indicators) and resulting 28 sub KPIs and the CHE (Commission on Higher Education) of the Ministry of Education with its 9 aspects and resulting 108 sub KPIs as a roadmap for internal audit and assessment of academic institutions. As the 2 organizations quality assessments do not converge, this has led to the academic establishments groping in the "dark" and shifting through the abyss of knowledge drawn from various disciplines, trying to find the Holy Grail of quality assurance and the planning and management of quality strategically.

With this dire need of a holistic approach to integrate quality assurance with the strategic planning framework, this paper aims at proposing an integrated quality management model for performance measurement and management incorporated in the strategic planning and strategic implementation framework in a higher education establishment. The proposed QMIPS (Quality Management, Information and Planning System) uses the ONESQA, the CHE and the MBNQA (Malcolm Baldridge National Quality Assurance) criteria to build a generic set of quality audit and assessment criteria mapped onto the 5 perspective of an adapted Balanced Scorecard strategic map.

Literature on Quality, Performance and Planning Management Systems

In the major literature of quality management, quality assessment and quality frameworks and systems, it appeared that the major Tenets of Quality [W.E. Deming, (1986), J.M. Juran, (1980), P.B. Crosby, (1979), K. Ishikawa, (1985), A.V. Feigenbaum, (1991)] could be surmised as:

- Quality is directed at Customer Satisfaction

- ?? Quality means "Meets Requirements"
- ?? Quality applies to every product (physical product, information product and service product)
- ?? Quality is a profitable long-term investment
- ?? Quality requires changing an organization's culture
- ?? Quality requires top management leadership
- ?? Quality is everybody's job
- ?? Quality equates to "good business practice and system"
- ?? Quality requires a focus on people
- ?? Quality is achieved through process improvement
- ?? Quality improvement is forever
- ?? Quality must be a fundamental long-term goal of the organization

In order to achieve all the above tenets, it calls for the development of a seamless "total", "quality" and "management" big picture integration that identifies the cause-effect system to measure and manage the quality of the institution. Lau and Anderson's (1998) paper introduced a 3 dimensional TQM model that emphasizes on big picture of the integration of the total and integrated system towards quality management that interfaces and crosses all boundaries.

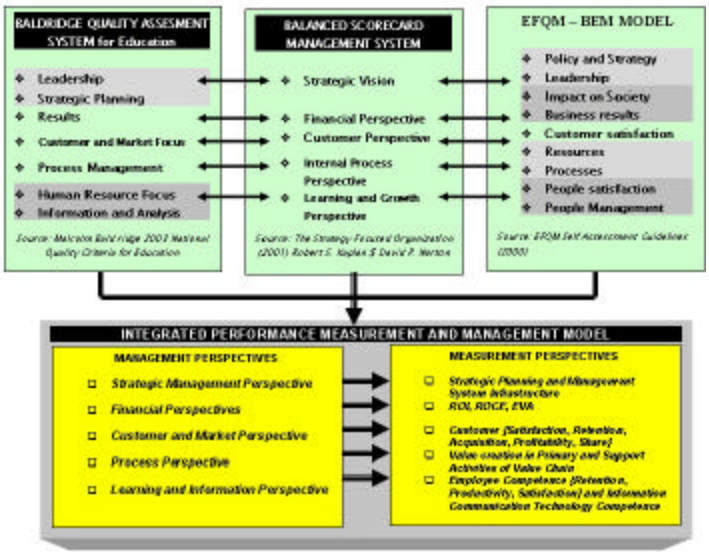
From the performance assessment literature, Conti, (2003) has succinctly identified 6 key "excellence and improvement" models as:

1. ISO 9001: 2000 Standard (ISO, 2000)
2. ISO 9004 : 2000 Standard (ISO 2000)
3. EFQM Excellence Model (EFQM, 2002)
4. Malcolm Baldridge Model (NIST, 2002)
5. Deming Application Prize Model (Deming Prize, 2002)
6. Other TQM models, proposed by other organizations, authors, consultants specially conceived for organizational improvement.

Conti, 2002/2 has contended that models 3, 4 and 5 can be used for excellence recognition, "level of quality" recognition and organization improvement, whereas model 1 can be used for conformity assessment and model 2 for conformity and performance assessment. Conti's contention is also supported by the research of Geishecker (2002) in that corporate performance management is dependent on a very diverse source of methodologies, processes and metrics that has a common and similar approach under the plethora of terminologies as coined by their authors.

As shown in Figure 1, an in-depth comparison and consolidation of themes and ideas of the 3 main models for performance management of MBQNA, EFQM and BSC will lead to the integrated performance measurement and management model that is the foundation of the QMIPS.

Figure 1: An Integrated Performance Measurement and Management Model



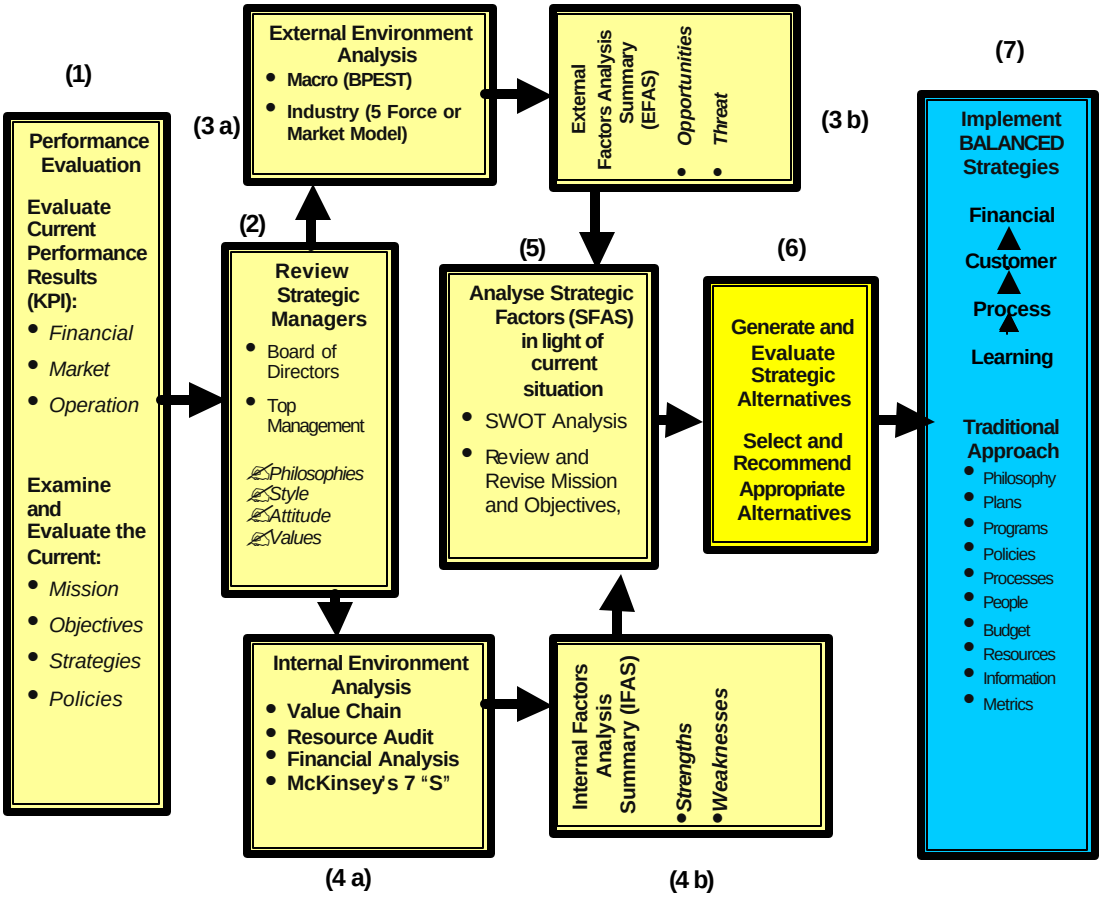
In the strategic planning and management models, Thomson and Strickland (2005), Johnson and Scoles (2002), Wheelen and Hunger (2003), David (2003), Mintzberg et al (2002), Hitt et.al (2005) and a host of strategic management literatures have identified the 3 key strategic planning phases as:

1. Strategic Analysis – steps 1 to 5,
2. Strategic Formulation and Choice – step 6, and
3. Strategic Implementation – step 7, as adapted in Figure 2.

Literature has also shown that in the past century, researches were models and concepts rich in phases 1 (steps 1 to 5) and 2 (step 6), but when it comes to the strategic implementation, it goes into the realm of radical or incremental changes that need change management and the intangible assets development and deployment of the human capital, information capital and organization that are still clouded in its controversial and hard to determine and quantify "soft" measures.

This inevitably leads to the low or mediocre success of the implementation of strategies by organizations. As yet, there has been little agreement on an integrated framework on strategic implementation, but Kaplan and Norton's (1996, 2001 and 2004) researches and introduction of the balanced scorecard and the strategy maps has offered a balanced approach to implementation of strategies successfully by defining its achievable key performance indicators.

Figure 2: Strategic Planning and Implementation Process



Source: Adapted from Wheelen and Hunger, (2003) and Kaplan and Norton, (2004)

Rationale of a QMIPS (Quality Management, Information and Planning System)

The rationale, guiding principles and philosophy of the QMIPS is based on the ideology of "Management through Measurement" a comprehensive and balanced quality management and planning system. The QMIPS in itself is composed of 2 sub models of:

- ***QMS (Quality Management System Model***) with its 9 KPI aspects and its 27 subsets of performance indicators, together with its scoring guidelines for the approach-deployment KPIs 1 to 8 and the results KPI 9,
- ***Strategic Implementation Model*** that identifies the mapping of the 9 KPIs onto the 5 perspectives forming the integrated QMIPS with each of the sets of KPI mapped onto each of the perspectives of the strategic implementation model.

Figure 3: QMS Model: Education Criteria for Academic Excellence

2004 Key Performance Indicators and Scoring		Point Values
KPI 1	**Vision, Mission and Strategic Plans**	**80**
	1.1 Vision and Mission	***30***
	1.2 Strategic Plans	***50***
KPI 2	**Teaching and Learning**	**200**
	2.1 Curriculum	***50***
	2.2 Education and Delivery Design processes	***50***
	2.3 Students, Stakeholders, and Employment Markets	***50***
	2.4 Student Services	***25***
	2.5 Supporting Processes	***25***
KPI 3	**Student Activities**	**80**
	3.1 Student Development Activities	***40***
	3.2 Guidance and Counselling System	***40***
KPI 4	**Research**	**120**
	4.1 Policy, Plan and Research	***40***
	4.2 Research Process	***40***
	4.3 Research Results	***40***
KPI 5	**Academic Services**	**50**
	5.1 Academic Services	***25***
	5.2 Social Responsibility	***25***
KPI 6	**Promotion of Thai Arts and Cultures**	**30**
	6.1 Promotion of Thai Arts and Cultures	***30***
KPI 7	**Administration**	**80**
	7.1 Leadership in the Faculty	***20***
	7.2 Information and Information Analysis	***15***
	7.3 Information Management	***15***
	7.4 Faculty and Staff	***30***
KPI 8	**Finance and Budgeting**	**40**
	8.1 Financial and Budgetary Sources	***20***
	8.2 Allocation and Audit	***20***
KPI 9	**Quality Assurance and Results**	**320**
	9.1 Internal Quality Assurance	***20***
	9.2 Student Learning Focused Results	***60***
	9.3 Student and Stakeholder Focused Results	***60***
	9.4 Employment Markets Focused Results	***60***
	9.5 Faculty and Staff Focused Results	***60***
	9.6 Effectiveness Results	***60***
	Total	**1000**

Source: Adapted from CHE's 9 KPI aspects, ONESQA 8 KPI aspects and MBNQA principles

Quality Management System Model

In the QMS model, as shown in Figure 3, KPI 1 to 8 are the approach – deployment criteria and the KPI 9 is the results criteria of education quality, with the main 9 sets of KPI as specified by the CHE and required by law in Thailand. The scoring guidelines determining the quality performance are based on the scoring criteria as shown in Figure 4. The overall performance of the quality assessment follows a set of performance band description. As mentioned earlier, the QMS model is based on the integration of the CHE's 9 KPI aspects, ONESQA's 8 sets of KPI using the adapted

MBNQA (MUA, 2003 and NIST, 2003) and scoring system as the integrating framework and principles for education quality performance assessment.

Figure 4: Scoring guidelines for Education Criteria of the QMS Model

Score	Approach – Deployment KPI 1 to 8
0 %	✍✍ No systematic approach as per the (P), (D), (C) and (A) of PDCA (Plan, Do, Check, Act) is evident; information is subjective and unreliable and sketchy.
10% - 20%	✍✍ The beginning of a systematic approach with (P) according to the basic requirements of the KPI as supported by documents is evident. ✍✍ Major gaps exist in deployment that would inhibit progress in achieving the basic requirements of the KPI. ✍✍ Early stages of transition from reacting to problems to a general improvement orientation are evident.
30% - 40%	✍✍ An effective, systematic approach, with (P) and (D) according to and responsive to the basic requirements of the KPI as supported by documents is evident . ✍✍ The approach is deployed, although some areas or work units are in early stages of deployment based on its (P). ✍✍ The beginning of a systematic approach to evaluation and improvement of key processes based on perfomance or outcome indicators is evident.
50% - 60%	✍✍ An effective, systematic approach, with (P), (D) and (C) according to and responsive to the overall requirements of the KPI and key organizational requirements as supported by documents is evident. ✍✍ The approach is well deployed, although deployment may vary in some areas or work units and is aligned with basic organizational needs identified in the other KPI. ✍✍ A fact-based, systematic evaluation and improvement process based on perfomance or outcome indicators is in place for improving the efficiency and effectiveness of key processes and outcomes or outputs.
70% - 80%	✍✍ An effective, systematic approach, with (P), (D), (C) and (A) according to and responsive to the multiple requirements of the KPI and current and changing educational service needs as supported by documents is evident. ✍✍ The approach is well deployed, with no significant gaps and is well integrated with your organizational needs identified in the other KPI. ✍✍ A fact-based, systematic evaluation and improvement process and organizational learning/sharing are key management tools; there is clear evidence of refinement, innovation, and improved integration as a result of organizational-level analysis and sharing based on perfomance or outcome indicators.
90% - 100%	✍✍ An effective, systematic approach, fully responsive to all the requirements of the KPI and all current and changing educational service needs that can be benchmarked and supported by documents is evident. ✍✍ The approach is fully deployed without significant weaknesses or gaps in any areas or work units and is fully integrated with your organizational needs identified in the other KPI. ✍✍ A very strong, fact-based, systematic evaluation and improvement process and extensive organizational learning/sharing are key management process and extensive organizational learning/sharing are key management tool; strong refinement, innovation, and integration, backed by excellent organizational-level analysis and sharing based on perfomance or outcome indicators, are evident.

Score	Results KPI 9
0 %	✍✍ There is no organizational performance results or poor results in areas based on established academic standards and/ or performance and outcome indicators reported.
10% - 20%	✍✍ There are some improvements *and/or* early good performance levels in a few areas based on established academic standards *and/or* performance and outcome indicators reported. ✍✍ Results are not reported for many to most areas of importance to the key organizational requirements.
30% - 40%	✍✍ Improvements *and/or* good performance levels based on established academic standards and/ or performance and outcome indicators are reported in many areas of importance to the key organizational requirements. ✍✍ Early stages of developing trends and obtaining comparative information are evident. ✍✍ Results are reported for many to most areas of importance to the key organizational requirements.
50% - 60%	✍✍ Improvement trends *and/or* good performance levels based on established academic standards *and/ or* performance and outcome indicators are reported for most areas of importance to the key organization requirements. ✍✍ No pattern of adverse trends and no poor performance levels are evident in areas of importance to the key organizational requirements. ✍✍ Some trends *and/or* current performance levels-evaluated against relevant comparisons *and/or* benchmarks show areas of strength *and/or* good to very good relative performance levels. ✍✍ Organizational performance results address most key student, stakeholder, market, and process requirements.
70% - 80%	✍✍ Current performance is good to excellent based on established academic standards *and/ or* performance and outcome indicators in areas of importance to the key organizational requirements. ✍✍ Most improvement trends *and/or* current performance levels are sustained. ✍✍ Many to most trends *and/or* current performance levels-evaluated against relevant comparisons *and/or* benchmarks, show areas of leadership and very good relative performance levels. ✍✍ Organizational performance results address most key student, stakeholder, market, process, and action plan requirements.
90% - 100%	✍✍ Current performance is excellent based on established academic standards *and/ or* performance and outcome indicators in most areas of importance to the key organizational requirements and can be benchmarked at national or international level. ✍✍ Excellent improvement trends *and/or* sustained excellent performance levels are reported in most areas. ✍✍ Evidence of education sector and benchmark leadership is demonstrated in many areas. ✍✍ Organizational performance results fully address key student, stakeholder, market, process, and action plan requirements.

Source: Adapted from the MBNQA (NIST, 2003) scoring guidelines

The rationales of the use of the integrated QMS Model created from the ONESQA, CHE and MBQNA foundations are:

Rationale I: The measurements can be consolidated at the department, faculty and university to provide an inter-departmental and inter-faculty comparative or individualized performance measure. This will provide an insight into how a department unit is performing as compared to the faculty mean or the university mean. The key is an in-depth cause-effect analysis using the results for the development of quality and strives for continuous improvement.

Rationale II: On the audit and assessment aspect, each of the department and faculty will do its own assessment using the recommended individual and consensus review approach to reach an unbiased and democratic consensus based on the scoring guidelines. This is important as all members in a department or faculty would be unified towards the same direction. The audit and assessment by the Internal Audit and Assessment team to provide an assessment from a third party perspective will make use of the same process, procedures and scoring guidelines. Any differences between the department's and the faculty's assessment from the IAAT (Internal Audit and Assessment Team) can be identified and hammered out. This would lead to a very rich and diverse exchange of viewpoints and perspectives without causing conflicts as both sides approach the audit and assessment from the same QA guiding principles.

Rationale III: On the management aspect, as the philosophy of the QMIPS is "management through measurement", the means analysis and comparison will provide the metrics for an in-depth insight into the ways and means that needs

attention and improvement. This will lead to the reinforcement of the continuous improvement, as the metrics will be the key indicators of performance showing what needs to be improved on. This tries to avoid the fact that after the SAR (Self Assessment Report) has been developed and audited, and the feedback received from the IAAT report, the reports are put on the shelf to gather dust until the next audit and assessment cycle.

Rationale IV: On the sharing and learning aspect, this underlies a very fundamental philosophy of sharing and dissemination of knowledge throughout the organization. All the SAR and IAAT reports and findings and analysis are put onto the university QA web-site whereby all units can have access to and can look at how each unit is performing and how they can learn from each other. Above all, this will ensure the transparency for the quality assurance effort university wide. The sharing and dissemination of the information will pave the foundation for the organization to learn as one making it into a learning organization. The crux is that everyone learns from everyone for continuous improvement towards the same result as defined in the quality assurance policy.

Strategic Implementation Model

The rationale Quality Management is that the outcome of the quality audit and assessment from the QMS should lead to the 1 year and 5 year planning system of the academic and administrative units. To assist the planning of the units, the Balanced Scorecard and Strategy Mapping approach by Kaplan and Norton (1996, 2001 and 2004) is recommended as the main management model for the implementation of the strategies as identified in the strategic plan.

The QMIPS, as such, is the main quality management system for a balanced approach towards the achievement of academic excellence as defined in the strategic direction of an institution to sustain its competitive through a balanced focus on:

- ***The Academic Excellence focus*** – defines the mechanism and the constituents of academic achievement and outcomes of the institution,
- ***The Revenue Growth focus*** – defines the varieties and sources of the academic and service offers of the institution,
- ***The Stakeholders' Value Creation focus*** – defines the value created tailored to meet the stakeholders' needs and requirements,
- ***The Quality and Planning focus*** – defines the outcome assessment that leads to the strategic planning and quality management of the institution,
- ***The Process focus*** – defines the academic and administrative processes needed to achieve create value towards the institution's Academic Excellence and Revenue Growth,
- ***The Human Capital, Information Capital and Organization Capital focus*** – defines the human, information and organization capital needed to achieve the

above focus points. In essence, to achieve education quality in an institution, the imperatives are:

- **To achieve academic excellence productivity and revenue growth focus, we need:**
  - Quality students
  - Quality instructions in teaching, learning, research and administrative accountability
  - Quality and innovative curriculum, and
  - Quality infrastructure and conducive environment
- **To achieve the above focus, we need to create stakeholders' value:**
  - **Stakeholder Value** = f(Product Quality, Service Quality, Image, Relationship) / Cost
- **To achieve value creation focus, we need quality processes:**
  - The QMIPS (Quality Management and Information and Planning System) defines the major key processes to create value and ensures quality in the academic and administrative and management processes
- **To achieve the quality processes focus, we need to create and develop:**
  - Human Capital (Knowledge, Skills, Capabilities, Competence)
  - Information Capital (Database, ICT, Systems and Networks)
  - Organization Capital (Culture, Values, Teamwork, Alignment)

Discussion of the QMIPS

To consolidate the QMS and the adapted balanced scorecard (BSC) as shown in Figure 5, the 9 sets of KPIs are mapped onto the BSC model to identify the KPI specific to the perspective, so that the KPIs are the de facto measures for that perspective. This will ensure that the KPI specific to the perspective are enshrined as part of the processes or activities that needs to be identified and measured.

It is also very important to recognize the fact that the institution, academic units and smaller department have to develop their strategic plan and its QA management. The positive side of the balanced approach mechanism of the QMIPS is that it can be cascaded to all levels resulting in an aligned but customized scorecard at all levels of operations.

The performance assessment and measurement perspectives of the QMIPS in Figure 6 is comprised of 5 key perspectives with their corresponding KPIs are:

1. Strategic Perspective of Vision, Mission, Goals, Objectives and Strategies
2. Financial Perspective of Academic Excellence and Revenue Growth

3. Stakeholders Perspective of Value Creation

4. Internal Processes Perspective of the QMIPS of the 4 main processes of:
a. Education Operations Management Processes
b. Stakeholders Management Processes
c. Education Innovation Management Processes
d. Regulatory and Social Management Processes

5. Learning and Growth Perspective of:
a. Human Capital
b. Information Capital
c. Organization Capital

Figure 5: Mapping of the Education Criteria onto the Performance Management Perspectives

Strategic Perspective

It is noted that the adapted BSC has the strategic perspective that clearly defines the vision, mission, goals, objectives and the strategies of the institution. This is designed to highlight the importance and measurement of the performance of the other perspectives that must be aligned with the strategic aspects of the institution clearly in a cause effect linkage. The corresponding KPI is KPI 1 and is defined as:

KPI 1 Vision, Mission and Strategic Planning
Vision and Mission
Strategic Plans

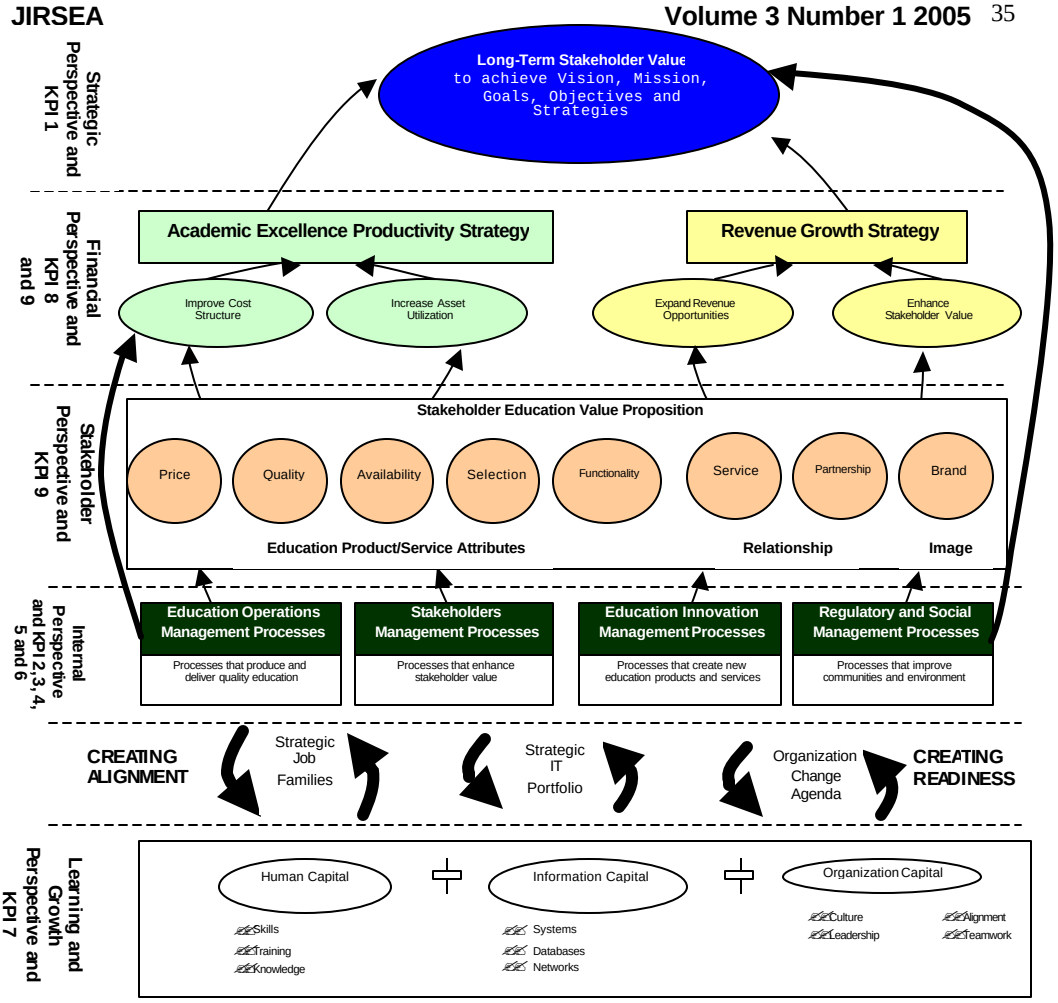
Financial Perspective

Green (1994), Galloway (1998) and Lapsley (2000) highlighted the pressures of reduced government funding and the use of performance systems and management accounting systems to balance between quality and financial viability. Based on Kaplan and Norton's BSC (1996, 2001 and 2004) the 2 main strategic themes are:

a. Academic Excellence Productivity strategic theme
b. Revenue Growth strategic theme

Both of these will conform to the mechanism of financial planning and budgeting to reduce operation cost at the most effective and efficient way to maximize the deployment and allocation of resources and wastage management. It is also concerned with what and how the institution can grow its revenue through innovative and creative educational product and services offers to the market. The corresponding KPI is KPI 8 **Budgeting and is defined as:**

KPI 8 **Finance and Budgeting**
Source of Funding and Budgeting
Allocation and Audit



Stakeholders Perspective

In the academic arena, the key stakeholders are the students, parents, alumni, employment market and regulatory and social community. It is contended that the creation of value to all the stakeholders are of importance but the imperative is to create value to the students as the key customer, as the final benchmark is on the student's acquisition and application of their knowledge, skills, capabilities, competence and ethics that are of primal importance as the outcome indicators. The rationale here is that the final evaluation by the other stakeholders is dependent on the student as the primary focus of interest and if the outcome indicators are promising and excellent, the other stakeholders will be satisfied indirectly. This is reinforced by Welsh and Dey's (2002) research, which iterated that the fundamental change in quality assurance in the USA is centred on the student-learning outcome. As such, in this model, the premise is that the key stakeholder is the student as the customer that needs to be acquired, retained and satisfied.

Under such circumstances, the students' value equation to be created is comprised of the benefits that they are provided with and can be defined as:

I. Product and Service attributes of the education products and service quality in terms of price, quality, availability, selection and functionality,

II. Relationship in terms of the service and partnership to be supportive of the range of educational product and service offers,
III. Image in terms of the brand of the institution,
IV. Costs (tangible and intangible) of the student in getting a quality education.

The corresponding KPI is KPI 9 and is defined as:

KPI 9 Quality Assurance and Results
Internal Quality Assurance
Student Learning Focused Results
Student and Stakeholder Focused Results
Employment Markets Focused Results
Faculty and Staff Focused Results
Effectiveness Results

Internal Process Perspective

The internal processes are the key education processes or activities that create and deliver on the value as defined and required by the stakeholders in the value created. These can be broadly classified into the 4 main processes that need to be managed and measured as follows:

Education Operations Management Processes define the key processes that the institution must set up to support a total teaching-learning and research environment leading to quality deployment and proactive and positive student learning centred outcomes. The corresponding sets of KPI are KPI 2, 3 and 4 are defined as:

KPI 2 Teaching and Learning
Education and Delivery Design Processes
Student Services
Supporting Processes
KPI 3 Student Activities
Student Development Activities
Guidance and Counselling System
KPI 4 Research
Policy, Plan and Research
Research Process
Research Results

Stakeholders Management Processes define all the stakeholders who have a vested interest in the outcome quality of the total education processes that meets their needs and requirements. The corresponding KPIs are KPI 2 and KPI 9 and are defined as:

KPI 2 Teaching and Learning
Learners, Stakeholders, and Employment Markets
KPI 9 Quality Assurance and Results
Internal Quality Assurance
Student Learning Focused Results
Student and Stakeholder Focused Results
Employment Markets Focused Results
Faculty and Staff Focused Results
Effectiveness Results

Education Innovation Management Processes define the creativeness and the innovativeness that differentiates the quality and diversity of the design and

development of the contents that delivers on education quality. The corresponding KPI is KPI 2 is defined as:

KPI 2 Teaching and Learning
Curriculum

Regulatory and Social Management Processes define the mechanisms and the services to respond to the regulatory and society demands. This in principle is aimed at how we manage and conform to the norms and needs of the heritage of the country in terms of values, culture, arts, traditions, customs and ethics. The corresponding KPIs are KPI 5 and 6 are defined as:

KPI 5 Academic Services
Academic Services
Social Responsibility

KPI 6 Promotion of Thai Arts and Cultures
Promotion of Thai Arts and Cultures

Learning and Growth Perspective

The learning and growth perspective is one of the critical areas to be managed in terms of the human capital, information capital and the organization. The foundation of the success of the institution relies on the mechanism and means that successfully manage the intangible assets that are the key deliverers and enablers of the internal processes to deliver on the value to meet and satisfy the diverse stakeholders. The Strategy Maps of Kaplan and Norton (2004) strives to convert the intangibility of these capital to tangible assets by the determination of the strategic readiness of the assets in terms of the competencies and capabilities of these assets to successfully manage the internal processes to deliver on the value to satisfy and commit the stakeholders to bring about the end results of the potential financial gains. The main corresponding KPI is KPI 7 and is defined as:

KPI 7 Administration
Leadership in the Faculty
Information and Information Analysis
Information Management
Faculty and Staff

Implications

As indicated above, with the mapping of the KPIs into their corresponding perspective, it will be easier to define and to focus on the quality aspects to be managed and measured without losing track that is still within the strategic direction of the institution as planned. The implications are:

?? ***The QMIPS is a comprehensive model that encompasses the key tenets of TQM*** as has been highlighted in the literature and that is focused on the key aspects of TQM regardless. This underlies the importance of the QMIPS as a QMS that define clearly the KPIs to be planned and managed strategically to maintain quality assurance that is streamlined to achieve the strategies of the institution.

?? ***The QMIPS subscribes to integration of managing quality in its totality*** as emphasized by Lau and Anderson (1998). This defines the imperatives, the means and mechanisms that need to be managed and that is still lacking in most institutions in their implementation of quality assurance. The QA in most institutions is still seen as a burden as required law and is done on a "pay lip service" per se and piece meal approach, rather than a well planned and managed system.

?? ***The QMIPS defines an integrated approach to the planning and management of the quality assurance*** of the institution. As highlighted by Geishecker (2002) and Conti, (2003), there are many corporate performance and assessment models. In management, there is no question to the Holy Grail or the panacea principle leading to the varieties and diversities of models that needs to be adapted and integrated. In the QMIPS, it draws on the better aspects of all the models to define the QMS that must be framed within the strategic management of the institution and this call for the development of an integrated performance measurement and management model as in Figure 3.

?? ***The QMIPS defines a balanced approach that highlights the critical areas that the institution must strategically plan for and manage***. As has been seen in the strategic management literature, the balanced scorecard approach could be a better approach to implement the strategies of an organization if it defines its strategy map carefully. Another key aspect is that it defines clearly the KPIs to be measured and managed and its cause-effect linkages, highlighting the imperatives that the KPIs for QA are strategically aligned and linked to one another.

Conclusion

In conclusion, based on the lessons learned from the past, and from the various and diverse researches and models, the QMIPS is designed to be a robust and generic model to incorporate the management of quality assurance within the strategic management framework. What we have done here are:

?? We have not tried to develop the Holy Grail of QA and Strategic Implementation as there is no perfect model and all models are debatable.

?? We have tried to adapt and not adopt any model as a whole but have tried to get the best from all the better models and approaches.

?? We have tried to create an appropriate model based on the principles and philosophies of the university using the theoretical foundations of the rich realms of models.

?? We have tried to manage QA and Strategic Planning and Implementation from a system's perspective in totality.

Managing QA strategically and to tie it within the strategic management framework is a tough job and signifies a very tough road ahead of us. But we need to address it properly and strategically in the light of heavy competition and the successful implementation of the QA to achieve and sustain a competitive advantage. We are confident that we can overcome all obstacles with the use of the QMIPS model.

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IR and the Quest for Q in ODL: Managing Institutional Research and Quality at the Open University Malaysia

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Introduction

The Open University Malaysia (OUM) started operations on the August of year 2000 as the seventh private university in Malaysia with a pioneer batch of 400 students. It is currently in its fourth year of operation with 25,000 students enrolled in the university's 17 programs. OUM is a private university established by a consortium of eleven public universities, thus making it unique, especially in the way it is managed and funded. Unlike its stakeholders, OUM is also an open and distance learning (ODL) institution – the first and the only one in Malaysia to date.

The university provides renewed opportunity to hundred of thousands of working adults. Those among the latter wishing to upgrade and re-skill themselves without having to leave their current jobs either for an emerging skill or for an academic degree will indeed find OUM as a logical choice. Additionally, the university's adoption of blended learning pedagogy and ODL learning and teaching philosophy provide a second avenue for the public to gain quality tertiary and affordable lifelong education. However, an open and distance learning university is still relatively a new phenomenon to the Malaysian education scene. The University's programs and graduates are therefore expected to be constantly open to scrutiny. An example of the latter is the concerns about the university's ability to match the more established public university both in terms of academic programmes and graduates' quality.

Nonetheless, OUM's quality performance to date has been reassured by two recent major developments. The first was the university's success in signing up thousands students in a relatively short space of time. The second, was the recent 2004 quality survey report [Jung, 2004] presented to the UNESCO's conference on "Mega-Universities and Selected Distance Teaching Institutions;" where on each of the eight major quality parameters surveyed OUM was prominently listed with the major world's mega ODL institutions. In short, foremost at OUM, quality education is about delivering the total learning experience via ODL mode and ensuring that it is within acceptable standards. And secondly, quality to OUM is about doing business and staying in the competitive business of higher education. Thus OUM has spared no efforts in ensuring that all its activities are channelled towards quality.

This paper is an overview of the policies as well as strategies adopted by the OUM in the management of research, particularly institutional research in the service of quality, productivity and sustainability. It is also a description about how OUM, being an ODL institution, the only one in the country, optimizing both teaching and research in a dynamically balanced way for the ultimate benefit of learners and stakeholders.

Total Quality in R&I

Institutional Research (IR) is an area of research that largely concerns with the gathering of critical information vital to an institution's operations and planning. In many parts of the world, including Malaysia, changes in public funding policy and government higher education policy have caused many universities to adopt a more entrepreneurial approach to their management. The latter led to an increased emphasis on research performance as part of the effort of enhancing performance. However, for most universities, researches are mostly done under the banner of academic research or applied research. Only in exceptional cases are institutional researches done or academicians involved in a big way in such research. This is especially true in the case of most public universities in Malaysia. The most quoted research issue of the latter is about striking a balance between academic teaching and academic research.

Most institutional research if ever done was led and conducted by non-academicians or consultants. However, private teaching universities like the Open University Malaysia have posited institutional research in a different light; it is no longer regarded as non issue or too marginal for mainstream university research. Private university is mostly a business venture with bottom-line that is ultimately profit oriented. Thus most research is carefully sanctioned to increase the business competitive edge of the university. Sustainable business is an imperative goal of all private universities. To achieve the former, most of the latter resort to ensuring operational efficiency, increase productivity, innovative products and services via institutional research.

At OU Malaysia (OUM), institutional research, among other things, is directed at ensuring learning contents are current and of the highest quality. Institutional research (IR) also provides objective, systematic and essential information that support planning, policy formation, and decision-making. OUM's IR is essential for planning, coordination, collection and dissemination of information concerning the quality characteristics, the level of performance and the institutional improvements that are needed to done by the university. In traditional universities, research is universally recognized as a significant part of an institution's quest of becoming a leading and quality institution of higher learning. Research quantity is also regarded as good indicator of an institution's ranking. However, the portfolios of research in an ODL institution and corporately managed higher learning will have to be different from that of a traditional or public university. The focus of research for instance will have to be about improving open-distance teaching and learning, including program delivery platforms and learning interfaces. Additionally, an entrepreneurially managed ODL institution will inevitably expect every research invested to produce good returns.

At OUM, the Centre for Quality Management and Research & Innovation (CQMRI) is responsible for the university research portfolios including in policy, promotion, monitoring and management of research and innovation. The Centre is a comprehensive service point for the management of all OUM's research & innovation pre and post award activities. This includes the management of all R&I funds from internal as well as external sources. The Centre is also unique in its structure for it has to synergize two different core businesses: (i) quality management, and (ii) research and innovation. The basic strategy adopted by the Centre is to ensure that both (i) and (ii) contribute towards the university's competitive edge. The centre is also managed

as a "cost recovery centre" as opposed to the "cost centre model" largely found in traditional public universities.

Research and its subsequent innovation into marketable products and timely services is undoubtedly one of the most important ingredients of ensuring OUM's sustainable business. Without research and innovation activities, the university's products will quickly loose attractiveness and services would stagnate. However, R&I activities do not always guarantee successful results. The former is rather expensive and the latter can be rather elusive. This is why research management and the issue of total quality in research and development [McLaughlin, 1997] are crucial to OUM. Therefore, given the importance of ensuring all research activities of the universities are well coordinated, resources and grants are optimized, and the risks of failures are minimized, the application of total quality principles and practices in R&I management is not only a sufficient but a necessary condition. Thus in the case of OUM, CQMRI is responsible in ensuring that the total quality principles and practices are vigorously applied in the R&I management. The centre seeks to integrate quality management methods and techniques to ensure that quality research are maximized and quality results are achieved. This is maintained by aligning and seeking optimal synergy of the three major systems namely between the management that provides leadership, the cultural that empowers people, and the technical that facilitates innovation.

The total quality management of R&I at OUM is about research for quality by emphasizing the quality of research. Institutional research that includes learner enrolment, credit transfer, KPI surveys, service satisfaction, Learning Service Centre, attrition rate, student profile, and personalized learning provides the background data for informed decisions. The latter are critical to the maintenance and improvement of institution's quality. They also prepare OUM resources for positive change by motivating employees and empowering all within the system through continuous improvement. The cumulative result of these efforts is products and services are aligned in meeting customer expectations through systems that are both effective and efficient in meeting management priorities. These are imperatives in fulfilling OUM's mission and vision in democratizing education and maintaining leadership in ODL.

In short, OUM's bottom-line IR strategy is towards constantly producing high-quality products and services that will continue to provide a competitive edge to the university while minimizing costs due to rework, returns, downtime and scrap. Indeed, outstanding quality performance via research and innovation generates satisfied customers, who will always reward the institution with continued patronage and, most importantly, free advertising.

Quality ODL

OUM success in signing up huge number of students in relatively short time (25,000 students in less than four years) has been attributed by industry watchers to the innovative model that the university's founders adopted. At the heart of the model is the idea of an open and distance learning (ODL) private university owned by a consortium of 11 Public Universities. The other is the idea of leveraging on the

resources of the stakeholder universities for most of the university's academic operations [Abdullah Sanusi Ahmad, 2001]. An additional advantage of OUM is that as an ODL institution the university enjoys a level of freedom in the choice of pedagogy and learning management system.

The other contributing success factor is in the adoption of the blended pedagogy (online learning, face to face tutorials, and self managed learning). The latter injects flexibility in the deliveries of academic programs unattainable by conventional modes. The blended pedagogy allows learners to have flexibility in learning duration, as well as the choice of going for face to face tutorial or total personalized self managed learning. The 31 learning centres distributed throughout the country further enable learners the flexibility for registration, electing subjects, choice of classes, and exams. The centre also facilitates the delivery of new courses to learners, including bridging and specialized courses, as well as any enhancement of existing programs. Another flexibility accrued from such a system is that learner has the choice of alternative learning exits routes (e.g. Certificate, Diploma, or Degrees): a benefit that is seldom seen in the closed traditional university system.

OUM innovative model is best seen in its functional and operational structure, which is a learner-centred as opposed to the conventional faculty-centred model of the public university. In terms of curriculum offerings, this model is translated as catering more to students need to learn rather than simply what faculties wish to teach. OUM has established distributed learning centres where facilities for teaching and learning are available closest and most convenient to the learners. An important element in the latter is the small tutorial classes conducted fortnightly by experienced tutors. The classes are supplemented by printed modules, customized textbooks, e-books and multimedia CD-ROMs. In additional to that is the one-stop comprehensive student service centre known as the Learner Services Centre (LSC), where students are able to receive advice on registry matters and related academic problems. Experienced staff manned the centre and their services are also accessible to students via toll free line.

OUM adopts a policy of "open sourcing" of knowledge. Traditionally, the main source of knowledge for tertiary education is the universities. However, it is widely accepted now that specialized knowledge is no longer the monopoly of the latter. Public and private research institutions are the other source of new knowledge. Knowledge accrued via research activities by these institutions need to be propagated and utilized by the society. One way of achieving this is in the joint development of study modules with the industry sectors. In this synergistic arrangement, the university will provide the theoretical contents while the industry complemented with their practical experience. Through such arrangements rapid revision of courseware, enhancement of modules and industrial placements can be effectively executed with maximum benefits to all parties.

Optimizing resources available within the public universities is central to the operating philosophy of the OUM. As indicated earlier since the stakeholders are the public universities, OUM is in a good position to leverage both on the physical and intellectual resources of its owners. Thus, students registered with OUM can use libraries of the public universities. Additionally, students have accessed to experienced tutors and subject matter experts (SMEs) recruited among the academics and professors from the public universities. This is facilitated by a number of OUM's

students support centres located in the public university campuses. The initial idea of just repackaging public universities programs however was later abandoned in favour of programs specially developed for OUM. The advantage accrued from the latter strategy is that specialized programs well suited to OUM learners can be developed with close cooperation from the subject matter experts, modules writer, academic moderators, tutors and consultants sourced from the public universities. By tapping on such expertise, academic programs of OUM can quickly attain the level of academic standard set by the regulators as well as they are tailor-made for learners.

The expected academic standard is achieved by adopting best practices in the management of OUM from the beginning. This is achieved by benchmarking visits to renowned open universities throughout the world. Through these visits, OUM have been able to learn from international open universities on how they operate and organize themselves. An important lesson learned from such visit is the need to identify the appropriate technology platforms for the delivery of courses particularly in the framework of current infrastructure and infrastructure of the nation. By using suitable technology platforms, the process of learning will be more cost effective and far likely to be successful. Thus, it has been the policy of OUM to make use of the right technology to benefit maximally the learning process, and not to be driven solely by technology or by the vendor's agenda.

The Quality Challenge

The OUM's ODL model poses a number of challenges. The first challenge [Abdullah Sanusi Ahmad, 2001] is to ensure that the concept of OUM is accepted by the public, particularly with respect to the perception of quality of education and programs. Although the acceptance to the concept of open and distance education is there, much work still need to be done in order to ensure full acceptance by the public. By and large, distance education is still considered by many as suitable learning mode only for adults. Young school leavers are considered as not being attracted to study through distance education, as it does not provide a "wholesome" learning atmosphere of a traditional university. Thus, the challenge is to change the public view of distance education as an acceptable alternative way of learning experience.

The second challenge is in the public perception that considers private higher education as a shade of inferior to that of public education [Abdullah Sanusi Ahmad, 2001]. It is important for OUM to dispel this misconception about private education. In the actual fact, with the setting up of Lembaga Akreditasi Negara or LAN (National Accreditation Board), the quality of education in these private institutions is similar, if not better, to that of public universities. The Ministry of Education, through Department of Private Education is constantly monitoring the facilities and standard of every private institution to ensure that students are not short-changed when they enrolled in these institutions.

The third challenge is to find academics and support staffs that are not only familiar but also very much committed to open and distance learning [Abdullah Sanusi Ahmad, 2002]. The latter is crucial since facilitating learning through distance education

requires a lot of effort, expertise and patience. Learning materials must be "pedagogically fit" to assist effective students learning. Learning modules for distance education need to be self-contained, in most cases, enabling independent learning with little need for conventional tutoring intervention. Additionally, the module has to be fully enriched with interactive and dynamic information, including links to resources available in the web. Thus the preparation of a study module involves the participation of many talents. Module writers are engaged to prepare materials. These materials have to be moderated by subject matter experts. The moderated material will have to be analyzed and edited by instructional designers, before they are ready for a full module development. Finally, the completed module will have to be field tested to ensure suitability and quality.

The fourth challenge is to provide a wide spectrum of courses that meet the needs of learners. At the moment, most of distance learning programs are confined to providing programs in the arts and the soft sciences namely in Business Management, Information Technology and Social Sciences. Few ODL institutions are offering courses in Science, Medicine and Engineering mostly owing to technical and resource constraints. However, OUM has successfully overcome the latter, thus enabling the offering of those programs in the physical sciences and engineering since the second year of its establishment.

The Quality Enabler

At OUM, the challenges described above are considered as subsumed under the challenge of delivering holistic quality education. OUM is committed to the latter in terms of ensuring that the total learning experience will be at par with acceptable international standards [Star, 2004]. The other major reason is because in the very competitive private education industry, the "quality path" is the only way for OUM to do business and to stay in the business. The Centre for Quality Management and Research & Innovation (CQMRI) is seen as a catalyst and facilitator of all OUM's quality and research initiatives. Among other things, the centre has adopted a strategy to commission a total quality management system, including seeking ISO 9001:2000 certification for some of the university services. Compliance to ISO9001:2000 will involve a number of activities that are very dependent on the outputs of IR.

Indeed, the role of IR is seen as especially crucial in the monitoring of OUM's key performance indicators that include:

- Corporate Culture: Policies; vision and mission statements, mottos, levels of commitment and attitudes of staffs;
- Products: Learning courseware (e.g. printed modules, CD-ROM, e-learning platform as well as e-learning course wares)
- Assessments: Examination processes, completion rates, performance of competencies or practical skills;
- Services: Learner Support services such as registration and advisory services, tutoring and counselling, feedback and guidance in learning (assignments), support for learner's progress, career advice, management of learning centres;

?? Support systems: Delivery systems, record keeping, scheduling, quality assurance procedures.
?? Graduate Competencies: learning skills, communication skills, professional skills, and entrepreneurial skills.

At the heart of the quality effort is to improve and monitor quality in curriculum and courseware development. Curriculum and courseware development are the core activities and products that shaped OUM's academic programs as well as in meeting market demands. The specific task of overseeing courseware development is assigned to the Centre for Instructional Design and Technology (CIDT). The centre, with close cooperation of the faculties, is responsible both for producing as well as ensuring quality and learner-friendliness of the courseware. The latter is achieved by regular field tests and benchmarking exercises against the best in education industry.

In order to further enhance and maintain the highest standards, the academic and courseware development processes are subjected to a very rigorous system of procedures [Chng et al, 2003]. Before any academic program is offered, a market survey is launched. A team comprising deans of faculties, lecturers and experts from professional bodies is set up to formulate the first draft of the curriculum. The draft curriculum is initially presented to the Board of Studies comprising of experts from academia, government and the industry for comments. The curriculum is then subjected to the scrutiny of the Academic Board of the university, comprising of senior faculty members and academic stakeholders. Finally, it is presented to the Private Education Department and the National Accreditation Board at the Ministry of Education for the approval prior to the public offerings.

The maintenance of quality in courseware preparation is an important element of the university's quality control initiatives. However, it is the actual presentation to the individual learner (involving tutors, tutees and the process of tutoring), which constitutes one of the most important elements in OUM's blended pedagogy. A third of the learning process at OUM involves face-to-face tutoring, followed another two-third involving online learning and self-managed learning respectively. All these methods of learning rely on courseware, and indeed the quality of the learning depends heavily on the quality of courseware.

The other important learning materials that are crucial to the success of the blended pedagogy are the Web courseware, which is a web based tutorial enhancement and web focused learning. At the heart of the latter is the locally developed world-class learning management system known as MyLMS. Through the mediation of MyLMS, learners are able to control their learning at their own pace and convenience. MyLMS is comprehensively equipped with e-learning tools enablers such as e-library, e-tutorial, e-mail, chat, bulletin board, learning resources as well as course information. The university's digital library and electronic databases, as well as public universities library are also accessible via the MyLMS.

Currently OUM employs 1,200 tutors from all over the country and tutorial sessions are conducted at 31 OUM learning centres serving students throughout the country. Only suitable and qualified academics and practitioners from the industry are short listed and appointed as OUM's tutor. Taking cognizance that our tutors come from diverse backgrounds, tutors are trained in the "art of ODL tutoring," including in

academic counselling techniques. They are also equipped with "tutors' kit" of supporting educational materials and tools. The training and the kit ensure some form of standardization in the process of tutoring and face-to- face delivery of materials.

Periodic assessments of tutor performance are carried out by OUM academic staff as well as feedback from learners and Learning Centre administrators. Tutors and learners also regularly provide feedbacks on the learning materials. The latter is constantly reviewed and updated based on such feedbacks. In order to ensure that quality learning can takes place, face to face tutorial classes are kept small, 15-20 learners per group. In fact the ratio of tutors to learners is kept at about 1:16 level that is comparable to international standards (Table 1).

HEI	**Academic Staff**	**Tutors**	**Students**	**Ratio Tutor: Students**	**Ratio Academic Staff: Students**
UK OU	1,159	7,758	227,082	1:29	1:196
OU HK	91	1098	25,115	1:23	1:275
ST OU	380	554	193,381	1:349	1:508
TOP NZ	180	300	29,385	1:98	1:163
U Terbuka, Indonesia	789	NA	353,000	1:16	1:447
OU Malaysia	**43**	**1,200**	**19,770**	**1:16**	**1:440**
OU Malaysia (by end 2004)	***83***	***1,430***	***23,000***	***1:16***	***1:277***

Table 1: Comparative Ratio of Tutors and Students of selected major Open Universities

IR for Quality

The earlier sections have described some of the major challenges of quality management and the initiatives of CQMRI. The latter's success is closely tied with how well they are coordinated with institutional research (IR). Notably, with the cooperation of faculty members as well as other centres of the university, CQMRI coordinated series of IR to gauge the effectiveness and level of quality measures in OUM. These studies include the "effectiveness of online learning among OUM students," "effectiveness of curriculum," "students' performance," "tutors' performance," "students retention and attrition rates," "e-learning readiness of learners and tutors" as well as a comprehensive study on the "Total Service Quality of OUM."

The latter is an ongoing study and the result is expected to be available by the end the year. An example of IR focused on *Learners' priority-satisfaction analysis as a diagnostic tool in managing ODL at OUM* [Ramli et al, 2004] was recently concluded

involving namely the "Teachers- from the Ministry of Education" cohort representing about 50% of the total population of students. The study seeks to measure the degree of satisfaction among learners on the spectrum of services and products offered by the university. The output of the study was used as an indicator of quality to gauge the degree achieved by the university. The study employed the survey method using questionnaires as a major tool. Additionally in order to ensure greater reliability and accuracy the study includes a survey on the context of the learners' priorities expectations, and learners' satisfaction scores.

About 5,000 survey questionnaires were distributed to a representative sample of respondents [Ramli et al, 2004]. The questionnaires contain three major parts, namely,

Part 1: Learner Profile
Part 2: Priority Setting
Part 3: Level of satisfaction.

The Learner Profile section of the first part includes questions on: Gender, Age, Ethnic group, Marital status, Job sector, Highest qualifications at entry point, Courses enrolled, Method of surfing the Internet, reason for pursuing tertiary education, and for choosing OUM. Respondents were also asked about how satisfied they are with major OUM's Services and Facilities. The latter include the Learning Centres, Learner Services, Digital and Physical Library Facilities, Program of Study, Learning Materials, Fees Structure, Tutors, Administrators, and online resources as well as the Learning Management System (myLMS).

In the Part 2 of the questionnaire, respondents were asked to rank each service/facility based on their preference. The ranking scale was open-ended, meaning that learners may rank them from number 1 to any number. The number 1 indicating the highest ranking or highest importance while the bigger the number given to a service or facility, the lower will be the importance of that service or facility to the learner.

In the last part (Part 3) respondents were asked to indicate the level of satisfaction for each service or facility using the number 1 through 4, again with 1 indicating the highest level of satisfaction and 4 the lowest.

The outcome of the survey [Ramli et al, 2004] indicated high satisfaction scores attained for Tutors, Administrators, and Learning Centres, suggesting that students are satisfied with all the three areas of services with a high preference for face-to-face interactions. While lower satisfaction scores are registered for online services particularly myLMS, digital library as well as tutors' online interactions and web forum. These are perhaps indicators that OUM may need to improve the online support services, which include the myLMS and the digital library.

Conclusion

As an entrepreneurial university, OUM's greatest challenge is perhaps to assure stakeholders that its products and services are marketable as well as it business is sustainable. However, the marketability and sustainability of its products, services and

business may fundamentally lie in the assurance or perception that its programs and graduates could match or exceed the quality of the more established university. Additionally OUM has to ensure the consistent delivery of quality service and programs to all students and clients. The task of coordinating and initiating all these lies with the Centre for Quality Management and Research & Innovation (CQMRI).

The latter is a major responsibility centre for all quality and research initiatives of the university. One of the crucial tasks of the centre is to set up a suitable quality management system to improve and monitor OUM products, facilities and services. The centre is also responsible for the quality management of R&I including overseeing the institutional research initiatives to measure the quality of the university programs and services. Both quality assurance and institutional research activities are therefore closely coordinated and integrated in the centre's activities.

Arguably, OUM's quality performance to date has been reassured by the two major developments. The first was the university's success in signing up to twenty-five thousands students in less than four years, a relatively short space of time by any standard. The second, was the recent 2004 quality survey report [Jung, 2004] presented to the UNESCO's conference. OUM came up fairly well on each of the eight major quality parameters surveyed. Arguably too that the performance is related to OUM's ability thus far in delivering quality education and ensuring that the total learning experience in the ODL mode is at par with acceptable international standards. In the unforgiving competitiveness of private education, OUM has chosen the "quality path" as the only way for doing business and staying in business. The adoption of total quality techniques in R&I management and the optimal use of IR to support quality initiatives seem to be the working formula for OUM's quest for competitiveness and business sustainability.

CQMRI, is the major enabler where both quality management and research management are organizationally synergized, thus ensuring that research management systems and research outputs are efficiently as well as seamlessly translated into quality inputs both at the service and decision making levels. The centre unique organizational position enables it to coordinate all IR initiatives with the administrative units, the faculties, the registrar office, the student affairs and the ODL units. This coordination allows optimum management of IR to provide the institutional feedbacks required for informed and strategic decisions. The latter in turn will influence the maintenance and the improvement of quality of the university; which are imperatives in fulfilling OUM's mission and vision in democratizing education as well as maintaining leadership in ODL.

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Costs and Effectiveness of Wireless LAN in Higher Education

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Introduction

The two basic reasons for installing any local area network (LAN) are information sharing and resource sharing between computers (Fitzgerald & Dennis, 1999). A wireless (LAN), as the name indicates, is a method of linking computers to serve these functions without using cables. Wireless-equipped computers access an intranet which may in turn provides access to email and the Internet. A wireless LAN comprises a number of base stations or access points linked into the physical network backbone of the organisation. The base stations are radio transmitters and receivers, which communicate between the LAN backbone and with computers equipped with a wireless card, provided that they are within range.

Wireless equipment can include PCs, laptops and PDAs. A base station or several base stations may serve a room, lecture theatre or outdoor area. In contrast, a wired LAN will need one port for each computer that might be connected to the network. The number of base stations required in an area depends on the speed of service required. The more traffic the slower the system. A wireless network does not eliminate the need for wiring. It does reduce the number of wires that are needed and provides flexibility for location of PCs and access points (TechLearn, 2002).

The technology which is the basis of wireless LAN has been available for over fifty years, but the use of wireless LAN has only started to become mainstream within the last decade. Lack of open standards for spread spectrum frequency modulation, expensive and bulky proprietary hardware systems, slow transmission speeds, and difficult installation procedures have impacted negatively on the adoption of wireless LAN.

In contrast to traditional wired networks, wireless LANs represented lower performance, greater complexity and increased expenses (Lucero, 2002). Interest in wireless LAN is now beginning to grow. Wireless networks based on the IEEE 802.11 standard have begun to establish themselves in various roles within the community (Hayes, 2002). Internet access is available commercially and several trials are running in Sydney (Henderson, 2002). Manufactures of computers have embraced wireless networking, with some producing protocols of their own.

Previous studies

TechLearn (TechLearn, 2002) presented case studies of the applications of wireless LAN at the State University of New York, Seton Hall University and Carnegie-Mellon University, where the systems have been successfully implemented. They have defined a number of pedagogical advantages offered by wireless LAN:

- ?? Computers go to the teaching instead of the other way round - this makes for much more efficient use of resources and gives flexibility in the way teachers use computers
- ?? Wireless LAN allows for the classroom to be arranged in the most efficient way for teaching, at the same time allowing for the use of computers
- ?? Wireless LAN provides students with access to large amounts of information that is constantly updated
- ?? Wireless LAN has been used to improve teaching by allowing students to give real-time feedback to the teachers about how well the message is getting through
- ?? Wireless LAN allows for class tests and quizzes to be performed easily
- ?? Wireless LAN allows for data capture on-site and in real time
- ?? Dissemination of information is improved with wireless LAN
- ?? Wireless LAN allows for easier collaborative learning, when computers are to be used
- ?? Wireless LAN lets students make most use of their computers.

Besides the above, a number of additional benefits have been identified:

- ?? A greater choice of locations for study is offered to students
- ?? Potential savings in the costs of provision of study space
- ?? More cost-effective provision of network services in new locations

Against these benefits, a number of costs and drawbacks have been identified:

- ?? The initial outlay of the wireless LAN may be costly
- ?? The skill set of staff members requires expanding in order to operate the system
- ?? Data transfer rate is slower than wired LAN
- ?? Bandwidth may be limited when transceivers run above 30% load
- ?? The frequencies that Wireless LANs use are part of the unlicensed spectrum, which means that many different types of devices also share the spectrum. There is the potential for associated security and congestion problems to occur.

Salomon and Almog (Salomon & Almog, 1998) have researched the relationship between information technology and education and assert that:

- For the change to be successful, a convincing rationale needs to be presented to the users demonstrating that the change holds a great deal of potential for improving the teaching process.

- A number of different theories are presented, but the overall picture is that the concept of learning has changed greatly over time, and that active processing, rather than passive reception, is the best way to learn. Educational technology should therefore be designed to allow teachers to guide problem-solving activities, rather than just transmit knowledge.

Investigation of the educational effectiveness of using wireless LAN

A wireless LAN pilot project at Swinburne University was devised and administered by Swinburne Information Technology Service (ITS) who appointed a systems administrator and provided technical support. ITS has installed the wireless LAN system in select locations on the Hawthorn campus of Swinburne.

An evaluation of the project was undertaken to determine the technical effectiveness of wireless LAN, the educational effects of employing wireless LAN, and the cost effectives of wireless LAN in a higher education setting.

Educational effects

The Learning and Teaching Support unit of Swinburne University conducted an evaluation of the educational effects of employing wireless LAN. The evaluation objective was to determine the impact of using wireless LAN on the teaching and learning function in particular.

The key questions in the educational evaluation were: how do the features of wireless LAN contribute to the study behaviours of students, and how do they affect the way in which system users and providers perform their tasks?

These questions were operationalised as the following four research questions:

- Where do students use wireless LAN most?
- What types of tasks are performed most often on wireless LAN?
- What are the positive aspects of the use of wireless LAN?
- What are the negative aspects of the use of wireless LAN?

Student participants in the project fell into three groups: students who borrowed wireless LAN-equipped laptop computers from the Swinburne library; students who were issued with wireless LAN cards (WNICs) for use with their own laptop computers; and students who used their own laptop computers and WNICs.

Study 1 - Questionnaire

One hundred and six students from Swinburne University of Technology participated in a questionnaire-based study. Most of the students were first-time users of the wireless LAN-capable laptops.

The participants were issued with questionnaires to provide their opinions on various aspects of using wireless LAN. These aspects included the areas and tasks for which they used wireless LAN, positive and negative aspects of the system and specific questions regarding the use of the computers for group work. Answers to most of the questions were recorded through ticking check boxes or circling numbers on a Likert scale. Space was also provided for open-ended answers.

As a condition of borrowing the laptop computers, students were expected to complete the questionnaire upon returning the computers to the library. To ensure anonymity, the consent forms that students signed upon borrowing the computers was detached from the rest of the questionnaire immediately after signing. No identifying information was required in the other parts of the questionnaire.

The data from the questionnaires covered the following aspects of wireless LAN use:

- ?? Overall experience of using wireless LAN
- ?? Usage of wireless LAN compared to the wired network
- ?? Areas where wireless LAN was used
- ?? Tasks for which wireless LAN was used
- ?? Positive aspects of wireless LAN
- ?? Negative aspects of wireless LAN
- ?? Satisfaction with wireless LAN
- ?? Speed of wireless LAN data transfer compared to that of the wired network

The percentage of the user population that rated their overall experience on a 5-point Likert scale (1 = “hate it” to 5 = “love it”) was calculated. Overall, the students found the experience of using the wireless LAN laptops to be good. Among the comments made were:

- ?? “fantastic!! I love it, I get more work done, it helps for student collaboration, it's convenient…”

- ?? “I think the wireless LAN is a fantastic idea!…It offers a lot more flexibility and convenience. I really hope the wireless LAN is continued… If it was I would seriously consider buying a laptop to use it all the time. I can see it benefiting (sic) myself and other students enormously (sic).”

- ?? “It would be wonderful to extend this trial to a permanent facility…I also think its a good idea as we are being taught about this wonderful (sic) wireless world (e-society) and here is a real life example we students can access.”

- ?? “I am happy that Swinburne is doing this. This I believe is a definite (sic) right step in the right direction”

A few students rated their experience of using the wireless LAN laptops as negative. All of these students reported problems with the login process or with power supply for the laptops.

The percentage of the user population that rated their relative usage of wireless LAN to the wired network on a 5-point Likert scale (1 = "much less " to 5 = "much more") was calculated. Overall, the participants tended to use wireless LAN marginally more than they did the wired system; the mean score on this question was 2.67 out of a maximum of 5. Many participants commented that the loan period was too short, and a few had borrowed the laptops for non-networked tasks such as word processing.

The participants' rate of usage of the laptops on a number of wireless LAN-related tasks was calculated. Most of the participants had used the computers to work in groups, and in the comments they provided, many of them liked the choice offered by wireless LAN of places in which to conduct their group work. The high usage of wireless LAN for of accessing e-mail and the BlackBoard learning management system reflects wireless LAN's ability to provide course work information in a timely and convenient manner. This was reflected in the comments made by the participants. To a lesser extent, the participants entered data in real time through BlackBoard as well.

Breadth of information appeared to be another factor in the use of wireless LAN, reflected by the high usage of the system for Internet research and surfing. Very few students used CoolCat (the inter-library resource database) or Video-On-Demand, which were also available on the network. Other tasks that the laptops were used for include word processing and website design using programs such as DreamWeaver.

The percentage of participants who agreed on a number of positive aspects of wireless LAN was calculated. The majority of the participants found that the system performed as expected, and saw the introduction of this new technology as being positive. They found that the system allowed them flexibility of use, across a wide range of areas on campus, and that wireless LAN facilitated their university work, and their ability to work with their classmates. How ever, only a quarter of respondents felt that it allowed more activities compared to the wired system, and only a third of respondents felt that wireless LAN encouraged group work and facilitated collaborative learning.

Considering that the participants were mostly first-time users of the system, and that they had relatively little time to explore the use of wireless LAN, it may be that they have not yet had the opportunity to use wireless LAN in more complex collaborative learning tasks. Note also that group work was also the most common task performed using the wireless LAN laptops; participants commented that the laptops afforded the arrangement of seating best suited to group work, an advantage not offered by the wired desktop computers in laboratories.

The percentage of participants who agreed on a number of positive aspects of wireless LAN was calculated. Despite its advantages, the portability of the laptops was a source of concern for the students.

Students were worried about the possibility of the laptops being stolen, even though they were provided with security cables to lock the laptops to fixed furniture such as

study carrels. Transportation of the laptops was also a source of concern to the students, because of the possibility of damage occurring in transit. Many of the participants reported being annoyed by the process of logging in to the wireless LAN network, citing two main problems. First problem identified was that the login procedure required the entry of two separate identities and passwords.

They felt that, since they were effectively logging onto an internal network within the campus grounds, a single identity and password should suffice. The second problem was that the system regularly failed to locate the network branch in which the user's network account resided. This problem resulted in participants often having to make three or four attempts to log in successfully.

Although the respondents were pleased with the increased range of choices of places to work, they felt that the wireless LAN system's area coverage should be increased. This applied especially to buildings where classes are held so that they could use wireless LAN during classes if they wished. Finally, demand for the laptops from the library was so high that students experienced difficulty in finding available laptops to borrow, and they reported this to be a source of annoyance.

The percentage of the user population that rated their impressions of the wireless LAN data transfer speed compared to that of the wired network on a 5-point Likert scale (1 = "much worse" to 5 = "much better") was calculated. Overall, participants found wireless LAN data transfer speed to be slightly faster than that of the wired network. This result is counterintuitive; since the maximum wireless LAN data transfer speed is 11 Mbps, while the wired system operates at a maximum of 100 Mbps. However, examining the main tasks performed on wireless LAN, the data required for transfer was of such small volume that differences between the data transfer speeds would have been negligible. Of the tasks examined, Video-On-Demand would have best differentiated between the two systems. However, very few participants used this function on wireless LAN.

The coverage area of the wireless LAN system was divided into discrete sections, and the percentage of the user population in each area was calculated. The areas of highest usage were within the library. This was largely due to the availability of study carrels and the availability of electrical sockets for the laptops' power adaptors. Participants commented that power supply was a problem, since internal battery power was limited.

A principal components analysis (PCA) of the positive and negative aspects of wireless LAN was performed using SPSS 10 on ratings of the positive and negative aspect of wireless LAN, to identify underlying factors in the way that participants viewed the value of wireless LAN to their university work. Multiple linear regressions were performed using SPSS 10 on the overall experience of using wireless LAN, and the preference of wireless LAN over the wired system, using the six factors as predictors.

The overall experience of using wireless LAN was positively influenced by wireless LAN's facilitation of university work (? = .303, $p < .01$), connectivity (? = .329, $p < .01$) and the ability to use wireless LAN more often and in more places (? = .178, $p < .05$).

Wireless LAN was preferred over the wired system because it was seen to facilitate university work (? = .190, p < .05) and allow computer use more often and in more places (? = .310, p < .01).

Wireless LAN was found to be useful for working in groups because it facilitated university work (? = .195, p < .05) and allowed computer use more often and in more places (? = .360, p < .01).

Study 2 – Observations and discussion with participants

Physical observations were undertaken to support the evaluation. The aim of the observations was to establish a usage pattern for laptops in general and for laptop computers employing the wireless LAN facility. Observation was also undertaken to identify what proportion of students were using a Swinburne laptop, borrowed from the library, and what proportion used a laptop of their own. It was also noted whether wireless cards (WNICs) employed were of the type issued by Swinburne, or were of a different brand from that supplied by Swinburne. Toward the end of the observation period discussions were conducted with users of wireless LAN.

The sample consisted of students at Swinburne University of Technology who used the wireless LAN system. Within this group, three types of users were identified according to the computers that they used. The first group consisted of students who borrowed wireless LAN-capable laptops from the library. The second group consisted of students who borrowed WNICs from Swinburne and used them with their own computers. The third group consisted of students using their own laptops and WNICs.

The subjects were observed over a period of five weeks using their laptops in the areas covered by wireless LAN. The observations were conducted at various times between 10.00 a.m. and 4.00 p.m., in order to maximise the range of subjects observed. For the first three weeks, the observations were conducted in a non-intrusive manner, with the researchers making their observations from a distance and not interacting with the subjects.

In the final two weeks of the observation phase, observers identified themselves to the subjects and obtained comments and entertained queries from the students. The observers surveyed the wireless LAN-enabled areas for students using laptop computers and other devices capable of wired or wireless LAN access. Visual identifications of the content on the computer screens were used to determine the students' use of LAN applications such as the BlackBoard learning management system or Internet browsers.

Observers also attempted to make visual identification of the mode of connection to the LAN. Three modes of connection were observed and recorded: 1) wired access through the LAN through wall sockets, 2) wireless LAN access through the use of the Cisco WNICs provided by Swinburne or sold at the Union bookshop and 3) wireless LAN access through the use of other WNICs, which clearly indicated that the WNICs were privately owned.

During the course of the study, 329 observed cases were recorded of portable computer devices being utilised by students, the vast majority of these being in the library. Laptop computers predominantly represented these devices, although one student was observed to use a hand-held device with wireless LAN capabilities. The observations made in the study were recorded in the form of notations on maps of the library, representing the location of the observed user and the type of use observed.

Observations revealed that the majority of laptop users were students using their own laptops, as opposed to students using a laptop computer borrowed from the library. While 269 observed cases were of students using personal machines, only 59 cases were of students using laptops borrowed from the library. Of the observed cases involving privately owned laptop computers, 139 cases were observed to be connected to the LAN using wireless LAN or wired LAN facilities, while 130 cases were observed to be in use without connection to the LAN.

Discussion with wireless LAN users gave rise to the following observations:

- Wireless coverage in the library is incomplete.
- Start-up and shutdown procedures are slow – this is a frustrating aspect of using the laptops
- There were difficulties completing the Novell login procedure – at each start-up, the system initially refused to connect to the correct branch or server, and this had to be manually set. Even then, the setting often took two or three attempts to be successful – either the correct server would not connect, or would not show up on the pull-down menu.
- Battery life of laptop computers is a limiting factor.
- The effort required to secure laptop computer on campus limits the attractiveness of using them on campus.
- Lecturers can use the system to call up BlackBoard materials for lectures or materials stored on the network drives
- Students can access their stored materials in a class using the system.

Study 3 – Support staff interviews

One representative teacher, one representative librarian and one representative system technical support staff member were selected.

An interview was conducted with one teacher of a subject selected for participation. The subjects selected were ones previously associated with greater than average use of the Blackboard learning management system and ones in which teachers were prepared to support evaluation of the project by encouraging participation and facilitating distribution of the cards.

An interview was conducted with one member of the library staff engaged on the loans desk, which prepared the WNIC-equipped laptop computers for loan and devised and administered the loans system. The loans desk staff also collected the questionnaires from students on return of the laptop computers and liaised with the project evaluation team. Library loans desk staff worked with the Information Technology Services wireless LAN project staff responsible for the system and for maintenance of the laptop computers available for loan to students.

An interview was conducted with an ITS systems technician for the wireless project who was responsible for maintenance of the wireless-equipped laptop computer loaned out through the library.

The major points made by the teacher interviewed were:

- Students either used wireless LAN intensively or not at all.
- Students using the system were more motivated – the project group with the best results used wireless LAN. The group worked more efficiently because they did not experience shortage of computing resources and could share their work and files online instead of using disks. This level of efficiency was not seen previously.
- Wireless LAN helped in providing access to the Blackboard learning management system and in the availability of computing resources.
- Wireless LAN had the potential to facilitate teaching because computers could be set up anywhere. It would be valuable for both learning materials and for Internet access. It would facilitate presentation of live samples of websites instead of static overheads.
- Laptops available for loan through the library need web design and multimedia software in addition to the software currently supplied.

Observations made by the library loans desk staff member included:

- The demand has been large creating a lot of extra work for staff including walking backwards and forwards to the secure area to retrieving equipment and often finding none available. Library loans desk staff needs to check all 5 items issued with each laptop each time a laptop was returned which was a considerable workload.
- The 4-hour loans seemed to be used by students for university work purposes
- The 4-hour loans system was very labour intensive for library loans staff. They needed to explain and often to demonstrate the logon procedure.
- Students loaded additional software and changed settings, which made it hard for other students, as no two laptops were the same. Students saved lots of rubbish on laptops and as they were always on loan cleaning up them was impossible

?? Many students used the laptops as personal PCs not for wireless LAN purposes.

Observations of the ITS wireless support technician interviewed included:

?? Over the period that the wireless LAN evaluation trial was running, 80 technical support jobs were logged. Half of these were directly related to system problems, and half of the system problems were related to training the students to use the system.

?? No physical restrictions were noted, apart from the usual issues such as building densities.

?? No technological failures were noted. Two hardware failures were repaired, but neither of these was related to wireless LAN.

?? Settings on the library laptops were often found to have been changed upon return, but these were easily reset when the computers were re-imaged as they were regularly.

?? Wireless LAN was no more difficult to maintain and administer than the wired system. The only challenge was that since the equipment was mobile, staff could not always get access to the computers for maintenance work.

?? No security problems occurred. At one point it was suspected that the RAM chips were being stolen from the laptops. This was later found to not be the case. As a precaution the two 64 Mb RAM chips in the computers were replaced with a single 128 Mb chip, so that if they were removed, the computer would fail to work (removing one 64 Mb chip would have allowed the computer to continue working, making detection of the theft more difficult). No information was available on how often the locking cables for the laptops were used.

?? Students did not perform any unexpected activities on the laptops. However, there was one case of a large amount of pornographic material being left on one of the laptops' hard disk. Often, settings on the computers were found to have been changed, apparently in an attempt by students to configure the computers to their private ISPs.

?? Little extra training was needed for staff to maintain and administer the wireless LAN system. The total required training time was about one day. The only new feature of wireless LAN as compared to the wired system was the VPN tunnel software. Apart from that, the training only required staff to learn the specific settings for the wireless LAN system.

Summary of findings on educational effectiveness

?? Most participating students liked using wireless LAN

?? On average, students who borrowed laptop computers from the library used wireless LAN as much as the wired system

?? The area of highest usage was the library, especially the third floor

?? Group work, e-mailing, BlackBoard learning management system activities and Internet research and surfing were the tasks most often performed on wireless LAN

?? Flexibility, the ability to perform computing in a wide range of areas and the facilitation of university work were the most positive aspects of wireless LAN

?? Limited area coverage, login difficulties and concerns about equipment damage and loss, and the limited life of laptop batteries were the most negative aspects of wireless LAN

?? No difference in the data transfer speed of wireless LAN and the wired LAN was noticed by users

?? The overall experience of using wireless LAN was positively influenced by wireless LAN's facilitation of university work, connectivity and the ability to use wireless LAN more often and in more places

?? Wireless LAN was preferred over the wired system because it was seen to facilitate university work and allow computer use more often and in more places

?? Wireless LAN was found to be useful for working in groups because it facilitated university work and allowed computer use more often and in more places

?? The majority of students observed using wireless LAN used their own computers and WNICs

?? Few of laptop computers that were borrowed from the library were seen to be in use on campus

Summary of recommendations

?? The coverage area of wireless LAN on the Hawthorn campus should be increased, especially in traditional work areas such as the BA and EN buildings

?? Provision of study carrels with power points should be increased

?? The login procedure should be streamlined

?? The wireless connection should be made more resistant to dropouts

?? Wireless LAN-capable laptops should be loaned on shorter terms if increasing the use of wireless LAN is a priority in making laptops available for loan.

Calculation of the cost effectiveness of using wireless LAN in higher education

In considering the practicalities of implementing wireless technology for learning and teaching, one needs to consider not only how well the technology may work in terms of enhancing learning and teaching but also whether it is cost effective. During discussions with several executives within large organisations, the real issue in preventing a wireless LAN deployment or even a pilot project like the one discussed in this paper was, "how do you justify wireless infrastructure from a business case prospective?" (Participant interviews, 2004).

We know only too well that industry may have differing business drivers from a university. A university may be able to justify an expense or investment by stating that the expenditure increased the student experience. Most organisations however are mainly interested in the expenditure directly affecting the "bottom line" in a positive sense and therefore enabling the delivery of a greater return to shareholders. For that reason, we felt it was imperative to add a discussion that highlights the costs and presents a cost comparison between a traditional computer laboratory and one that is more "virtual" but still provides a similar number of machines to students in a wireless setting, by using wireless enabled laptops. If the cost is prohibitive, the institution is unlikely to embrace the technology.

Relative cost effectiveness for the conventional PC lab and wireless LAN

The cost evaluation here is based upon the three-year lease of equipment and space and includes all ancillary costs including cleaning, light and power, as well as support costs for staff and maintenance costs for hardware and software. Facilities and Services, the Library and ITS staff provided the cost estimates.

In summary, the three-year lease cost of a 20 PC laboratory was virtually identical to the provision of a similar number of laptop computers available for loan. However when availability, in terms of access hours, is taken into account then the laptops prove to be even more cost effective. The "bottom line" measurement or metric used in this comparison was "cost per usable hour".

Existing PC laboratories are open for an average of 11 hours per day and 330 days per year. On the assumption that all PCs are used continuously for these times, the cost per system, per usable hour, is 56 cents.

The laptops are harder to quantify, but the best case, assuming 24 hours, 365 days per year would make the cost per system per usable hour only 22 cents. A more realistic estimate of 18 hours by 300 days per year would cost only 35 cents. Even if we assume similar usable hours for the laptops as for the laboratory machines then the cost per laptop usable hour is 52 cents.

A Library study has shown that 34% of current students already own a laptop computer. The ease of access provided by the wireless network needed to support laptop activity could be expected to significantly increase this number and thus reduce dependency on University provided equipment.

It is not being argued here that all PC laboratories could or should be replaced by wireless enabled laptops. It is demonstrated, however, that cost is no overwhelming inhibitor to the use of laptops and may even facilitate additional savings, as well as the provision and promotion of wireless access to networked information, in support of flexible learning and teaching.

Costing a PC laboratory

The following assumptions are based upon normal usage with costing provided by Facilities and Services. The exploratory project in "Mobile Computing" has provided experiences for ITS and the Library which make a realistic comparison possible. Table 1 summarises the costing using the "best case" comparison in favour of the laptop solution.

Table 1: Cost of a 20 PC Laboratory

Item	Unit	First Yr Cost	3 Year Cost
No of PCs	1	20	20
Space (Sq M)	3.05	61.05	61.05
Leasing cost of PC	$561	$11220	$33660
Leasing cost of room	$235.40	$14371	$43113
Furniture Cost	$81.87	$1637	$1637
Provision of network/power pt.	$250	$5000	$5000
Incremental network cost	$840	$5600	$16800
Software and systems maint.	$157.72	$3154	$9463
Cleaning cost per sq m	$10	$610	$1831
Security cost per sq m	$6.24	$381	$1143
Light, Power etc. per sq m	$10.62	$648	$1944
Other facilities per sq m	$15.19	$927	$2782
Total Cost		$43549	$117374
Unit cost per annum		$2177	$1956
Availability (average hrs per day)	11		
Cost per system per useable hr	41.44%	$0.60	$0.54

Note: rounding errors apply

Table 2: Cost for the wireless laptops

Item	Unit	First Yr Cost	3 Year Cost
No of PCs	1	20	20
Library Storage Space (Sq M)	4	4	4
Leasing cost of laptops	$1172.60	$23452	$70356
cost of library space	$235.40	$942	$2825
cabinet Cost	$2500	$2500	$2500
power pt. Access (5)	$80	$400	$400
Incremental network cost	$137	$2740	$8220
Software and systems maint.	$315.44	$6309	$18926
Cleaning cost per sq m	$10	$40	$120
Staff cost for loaning laptops	$4107.50	$4107	$12322
Power for re-charging	$10.62	$53	$159
Other costs	$0	$0	$0
Total Cost		$40543	$115829
Unit cost per annum		$2027	$1930
Availability (average hrs per day)	24		
Cost per system per useable hr	100%	$0.23	$0.22

Assumptions:

?? 20 desktop PCs per laboratory
?? 3.05 sq metres per PC
?? Annual lease cost per PC - $561
?? Annual lease cost of room - $235.40 per sq metre
?? Furniture purchase cost per PC - $81.87
?? Provision of network and power points per PC - $250
?? Incremental network cost - $840 per system per annum
?? Software and system maintenance - $157.72 per system per annum
?? Cleaning costs - $10 per sq metre per annum
?? Security and supervision - $6.24 per sq metre per annum
?? Light, power and air conditioning - $10.62 per sq metre per annum
?? Other Facilities related costs - $15.19 per sq metre per annum

Over three years this comes to a total of $117,374, or $39,125 per annum, as the cost of providing and operating a PC laboratory. Currently, laboratories managed by ITS are open for 330 days each year and an average of 11 hours each day. This makes the cost of each usable hour 56 cents on the assumption that all systems are used during these hours. In practice one might reduce this to 80% of usable hours to allow for periods of low demand (69 cents per usable hour).

Costing of wireless laptops

These costings are based upon experiences gained during the exploratory project. Comments from Library and ITS staff provide the basis for many of the assumptions.

Assumptions:

?? 20 laptops available for loan
?? Library storage space required – 4 sq metres
?? Annual lease cost per laptop - $1,172.60
?? Annual lease cost of Library space - $235.40 per sq metre
?? Storage cabinet for PCs - $2,500

?? Additional power points – five at $80 each
?? Incremental network costs - $221 per system
?? Software and system maintenance - $315.44 per system per annum
?? Library cleaning costs - $10 per sq metre per annum
?? Library staff costs - $4,107.50 per annum
?? Power for recharging - $10.62 per power outlet per annum

Over three years this comes to a total of $113,228.79 or $37,743 per annum. If we assume that laptop availability is the same as that for laboratory machines then the cost per usable hour per laptop is 52 cents. The best-case situation of 24 hours by 365 days reduces this to 22 cents. A more realistic usage of 18 hours per day for 300 days per annum gives 35 cents per usable hour.

Costing summary

Conventional wisdom indicates that because laptop systems are about twice the cost of a desktop system to purchase, then their use must be restricted. However, when one takes into account the total running costs, including dedicated space and amortise these over three years, then the flexibility of the wireless laptop brings the costs down to better than even.

The following table illustrates this:

	Desktop	**Laptop**
330 days by 11 hours	56c	52c
Best Case	56c	22c
Realistic Case	69c	35c

In the light of this favourable cost advantage for the laptop, the University is able to examine the application of wireless access in terms of its value as an educational tool which can facilitate collaborative learning – in the classroom, across campus, around the city and overseas - by extending the range of mobile devices and learning contexts in which mobile technologies are employed.

The analyses regarding the cost effectiveness of wireless technology in conjunction with the data in the tables below permits some broad conclusions. First, in the hypothetical situation of comparing 20 PC laboratory with wireless laptops, it was founded that the total costs after the first-year was 7% less for wireless technology. At the end of three years, wireless technology using laptops still accrued a small cost advantage (1.3% less) in comparison to PC laboratory. Second, wireless laptops gain even a greater Unit cost advantage over the traditional PC lab when one acknowledges their greater availability than PC labs. For instance, over three years the cost per usable hour of wireless laptops is only 41% of the unit cost for PC labs.

Given that in both cost comparisons, both the laptops and PC's are leased, it makes sense to adopt assets that have a greater opportunity for usage over each 24-hour cycle, as a real lease cost to the organisation still exists whilst assets are not being utilised. We do concede however, that students borrowing laptops on an overnight loan basis will probably not use the wireless connectivity, but will still able to use the

equipment on a "stand alone" situation away from the University's Wireless LANs or via dial-up connectivity into the University's network from a remote location. This still means that the laptops will be used for a greater period over a 24 hour time line than a fixed PC laboratory with it's many traditional access constraints, as discussed earlier. Given these findings, it is concluded that wireless technology is more cost-effective than PC labs.

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MBA Student Perceptions: Learning, Teaching, Entrepreneurial and Intrapreneurial Skills

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Introduction

The demand for more effective management education and skills in order to generate wealth creation and achieve competitiveness in international markets is a recurring theme in many Australian government official reports and reviews (Mathews, 2002). Management educators need to be cognisant of the drivers of change such as globalization, demographic shifts, technology and deregulation, and develop business school strategies with these in mind (Friga, Bettis and Sullivan, 2003). Formal management education has seen significant changes to the development and delivery of its curriculum to keep pace with changes in the managerial workplace and to meet government initiatives. For example, in 2002 the expected rate of return for an MBA was 11.1% in real wages growth, and it remains high, (Connolly, 2003).

Educational variety, through increased diversity of subjects within a program, meets the emerging needs of a new century (Davies, 1997) and management education providers should be accountable for its performance through the judgments of their students (AV-CC, 2003). Today's managers need to develop new skills and competencies including mastering a broad range of managerial disciplines (Lewis, Goodman, and Fandt, 1995) and management education providers need to help managers acquire these skills including entrepreneurial and intrapreneurial skills to enhance workplace creativity and problem solving.

The purpose of this study was to uncover student feedback on teaching, learning and skills acquisition in an MBA program in an Australian university. The MBA, used in this study, was redesigned two and a half years ago to be aligned with the University's new strategic direction, industry needs, and the Federal government's initiatives of entrepreneurship and innovation. The program is a fourteen subject managerial toolbox consisting of subjects such as opportunity evaluation, business planning, finance, entrepreneurial strategy, innovative leadership including an action research task, and four electives of which one is a double subject option of undertaking a significant industry based research project. There are 90 MBA programs in Australia, of which only eleven were awarded a five star rating by the Graduate Management Association of Australia (GMAA) a national association of MBA graduates. The study's MBA was awarded a five star rating in both 2003 and 2004 in terms of its standard and value.

Literature Review

Management education

The education environment is undergoing rapid evolution where learning methods, flexible learning technologies and changes to student life-long learning and teaching principles are eroding the traditional paradigms of management education. Unfortunately, Karpin's 1995 report on the future of management education overlooked the inclusion of opinions, knowledge and expertise of management academics (Mathews, 2002).

Mathews (2002) questions whether management academics should be change agents i.e. be proactive contemporary progressives generating radical new ideas or whether they should be reactive traditionalists delivering theory and practice to make changes in response to new demands from government, industry or the student body. Preferably, management educators should strive to marshal both contemporary and traditionalist approaches to meet the needs of today's management students.

Management education may be defined as:

A formal program of study, which is designed to provide knowledge of management processes and functions, and an understanding of, related disciplines supporting management activities. Management education involves the learning of practical skills and techniques, and the development of analytical, decision-making, communication and conceptual abilities (Mathews, 1999:7).

Through the design and delivery of curricula, management academics have the potential to create and develop new knowledge, ideas, and skills and impart these to their students. Hence, ongoing review and evaluation of learning, teaching and skills acquisition within management education programs is essential in order to maintain currency within the rapidly changing workplace.

Management qualifications are increasingly regarded as important to the public sector (Guardian, 2003) and to private sector workers. The changing rules of today's business may be driven by the need for senior position holders to continually innovate and hence embrace change. Therefore, it is essential that MBA programs recognise that managers require training in a number of areas including leadership, marketing, finance and operational, project and people management (Guardian, 2003; Lewis, Goodman, and Fandt, 1995).

Skills development

The role of management education in the development of student skills cannot be underestimated, for excellent teaching promotes high quality student learning (Ramsden, 1995). Tomorrow's successful manager must possess a range of skills including strong communication skills, flexibility to implement and adapt to change, team dynamics skills, technology and problem solving skills. They must also be effective foreign ambassadors (Lewis et al., 1995) as business communication and dealings are becoming global.

It appears that MBA skills development tends to vary in terms of depth according to whether the program is online or face-to-face. Specifically, researchers at Colorado State University's Business School compared distance students to their campus counterparts within the Executive MBA program regarding their perceptions of 12 specific competencies (http://distancelearn.about.com/library/weekly/aa063003a.htm). The study found that distance Education MBA students learned more than the traditional classroom based students particularly with respect to technology skills, quantitative skills and theory studies.

Entrepreneurial and Intrapreneurial Skills

Stimulating entrepreneurial and intrapreneurial skills and processes may enhance the traditional values of universities aligned with modern learning demands. Entrepreneurial skills are concerned with adding value whether it is financial, social or other and for the purpose of this study are defined, as a set of skills required in the establishment of a new enterprise. Intrapreneurial skills were defined as a set of skills requiring innovative behaviours within an existing organization. Innovative behaviours are complex in that they may occur impulsively by a groping process that moves iteratively towards the organization's aims and objectives that are loosely defined (Behn, 1988) or alternatively, they may be generated through comprehensive organizational planning (Borins, 1998).

To remain competitive, many large organizations are encouraging their managers to start-up new business developments within the existing organization. For example, Orica Chemicals, which developed their Live Wire? Program, which is designed to create, investigate and implement ideas that deliver cost savings, and new revenue streams for their business (Fazzino and Sheldrake, 2003).

In addition to focusing on intrapreneurial skills development within MBA programs, the literature indicates varying degrees of emphases on the development of entrepreneurial skills. For instance, at the University of Chicago, the Graduate School of Business (<www.mba.wfu.edu>) uses studies in MBA classes to teach entrepreneurial concepts. At this University students can refine their entrepreneurial skills by participating in the entrepreneurship national case writing competition. Similarly, at the University of Michigan Business School's William Davidson Institute, the MBA program provides training of business leaders including entrepreneurs and government officials (http://www.bus.umich.edu/Admissions/Mba /SpecialPrograms/Davidson.htm). In particular, the Institute reports that its international multidisciplinary action project was invaluable to students in terms of acquiring international experience, developing entrepreneurial management skills, and working with a dynamic team of students, managers and professionals.

Another skill development emphasised by some, in terms of MBA programs relates to the capacity to undertake research. For instance, Myers (1999) mentions research work undertaken by MBA students at Cornell's Johnson Graduate School of Management in the identification of undervalued stocks. Similarly, Wagner (2003) provides examples of strong applied research skills undertaken within the MBA program at the Arizona State University where students are required to write comprehensive business plans from actual research being undertaken on campus. In

some cases, the plans developed by the students, are used in businesses formed as a result of the research. MBA research is developing an international dimension (Mays, 1999). This is supported by the authors for their MBA integrating project students who, through applied research, conduct their projects on organizations that are based both in Australia and overseas.

The majority of MBA students are employed in large organizations and hence it was decided to explore the students' beliefs about the inclusion of both entrepreneurial and intrapreneurial skills in their management education program.

Methodology

The multi-method study utilized a 35-item questionnaire comprising both open and closed questions administered to a sample of 53 MBA students enrolled in a core leadership subject in the final stage of a five star MBA program.

Sample

The sample consisted 80 % males and 20 % females, 63% of the respondents were local students whilst 37% were from overseas countries. The overseas percentage is very close to the average number of international students enrolled in the MBA program at the University (34%), thus providing a degree of confidence in the representative ness of the sample. Fifty one percent of the responding students were studying full-time in the program and this is close to the actual enrolments in the program. Twenty seven percent of the respondents stated that they were permanent residents of Southeast Asia. Seventy two percent of the responding students were employed full-time during studies, 6% were working part-time and 22% had no employment during studies. Those that were employed, worked in both the private and public sectors.

Instrument

The double-sided one-page questionnaire contained open and closed questions addressing learning, teaching, a range of specific skills development including problem solving, and entrepreneurial and intrapreneurial skills development in the MBA program. The closed questions were anchored to a Likert-type Scale with 1=Strongly Disagree and 5=Strongly Agree. The open questions allowed the respondents to provide detailed explanations and feedback on their beliefs regarding entrepreneurial and intrapreneurial skills, and the strengths and weaknesses of the MBA program.

SPSS descriptive statistical analyses were cross-tabulated and Chi-squared tests, which calculate a measure of association, were utilized to uncover relationships between the independent and dependent variables in the quantitative data (Haire et al, 1998). Theme category analysis was used to uncover themes in the qualitative data that were used to inform and add rich meaning to the quantitative data analysis.

Findings of the Study

Quantitative analysis

The students were requested to indicate whether they had changed their opinion about the skills they intended to develop following their enrolment in the MBA program. 42 percent of the respondents had changed their opinion about skills acquisition whereas 58 percent did not alter their opinion about the skills they wished to acquire.

Learning and teaching environment, and specific skills development

Respondents were asked to indicate their degree of agreement on a five point Likert-type Scale to a series of statements regarding the learning and teaching environment, and specific skills development. Table 1 shows the percentage of students broadly agreeing with the given statement (the percentage includes the neutral category).

Table 1: Percentage of MBA Students Agreement with Statements (teaching and skills)

Statement	% Agree
1. The lecturers of the MBA motivated me to do my best work	92.5
2. The lecturers put a lot of time into commenting on my work	79.2
3. The lecturers made a real effort to understand difficulties I was having with my work	82.7
4. Lecturers normally gave me helpful feedback on how I was going	84.6
5. Lecturers were extremely good at explaining things	86.6
6. Lecturers worked hard to make their subjects interesting	96
7. The MBA developed my Problem-solving skills	98.1
8. The MBA sharpened my analytical skills	98.1
9. The MBA helped me develop my ability to work as a team member	98.1
10. The MBA helped me feel confident about tackling unfamiliar problems	98.0
11. The MBA improved my skills in written communication	96.1
12. The MBA helped me to develop the ability to plan my own work	96.0
13. Overall I was satisfied with the quality of the MBA course	92.2
14. The MBA degree will assist me when I start my own business	96.1
15. The MBA will assist me to help my present/future employing organisation to diversify its business	98.0
16. The probability of starting a new Business is greater than 50%	71.5
17. The probability of contributing ideas towards the diversification of an existing business is greater than 50%	94.0

Source: Authors

The following observations are noted for the data contained in Table 1:

1. A very high proportion of the respondents (92.5%) felt that the lecturers of the MBA program motivated them to do their best work.

2. 79% of the students felt that their lecturers put a lot of time into commenting on their work with nearly 21% not being happy with the feedback received from academic staff.

3. Nearly 83% of the respondents believed that academic staff had made every effort to understand difficulties students were facing with their academic work.

4. About 85% of the students were provided with helpful feedback on how they were progressing by academic staff.

5. An even high proportion (87%) believed that the academic staff was extremely good at explaining concepts to them.

6. A very high percentage (96%) felt that the lecturers worked hard to make their subjects interesting to them.

7. Over 98% of respondents believed that the MBA program developed their problem solving skills.

8. Exactly same proportion (98%) felt that the program sharpened their analytical skills.

9. Again 98% of the students agreed that the program helped them develop their ability to work as a team member.

10. 98% of the respondents believed that the program helped them feel confident about tackling unfamiliar problems.

11. 96% of the students felt that the MBA course improved their skills in written communication.

12. The same percentage (96%) expressed the viewpoint that the course helped them to develop their ability to plan their work.

13. Importantly a large majority of the students (92%) were overall satisfied with the quality of the MBA program.

14. 96% of the respondents believed that the MBA degree will assist them to start their own business.

15. An even higher proportion (98%) felt that the MBA will assist them to help their present/future employing organisational to diversify their business.

16. Just fewer than 72% of the respondents believed that the probability of them starting a new business was greater than 50%.

17. An even greater percentage (94%) agreed that the probability of them contributing ideas towards the diversification of an existing business is greater than 50%.

Finding: Statements one, three, four, five and six refer to teaching quality that is high (83% - 96%) and indicates high quality student learning as shown in the literature (Ramsden, 1995). Item two at 79% is the lowest quality of teaching perception

relating to feedback with 21% not being happy with the feedback received from academic staff.

Statements seven to fifteen and seventeen refer to attaining high skills development (92% - 98%) in particular communication, problem solving, entrepreneurial and innovation skills. Statement fifteen refers to the probability of starting a new business with 72% of respondents reporting that there was more than a 50% chance of them starting up their own business.

Statistical Inferential Analyses

The descriptive statistics contained in table 1were cross-tabulated against the key demographic variables and chi-squared test undertaken.

Gender

The first demographic variable considered was the gender of the student. The significant findings showed:

?? Regarding the issue of whether academic staff were extremely good at explaining concepts, gender was significant (chi-squared = 9.35, df=4, $p < 0.05$); in this case all female students broadly agreed with the statement, however, 14.3% of the male students disagreed with it.

?? Concerning the statement that the MBA will assist the student to help present/future employer to diversify their business, gender appears to be significant (chi-squared = 7.71, df=3, $p < 0.05$); a closer examination of the responses indicates that male students appear to be more in agreement with the statement (84.4% of such students either agreed or strongly agreed with it) than female students (only 44.4% either agreed or strongly agreed).

Age

Another variable subject to the chi-squared test procedure is the age of the student. This was not found to be significant in most cases with the following exceptions:

?? In regard to the statement “the lecturers of the MBA program motivated me to do my best work” the age of the student appears to be significant (chi-squared = 17.97, df = 9, $p<0.05$); the responses suggest that older students tend to be less in agreement with it, for example, none of the youngest group of students (21 to 30 years of age) disagreed with the statement whilst over 33% of the 41 to fifty age group did not agree with it.

?? Again age appears to be a significant variable concerning whether the MBA program helped the student feel confident about tackling unfamiliar problems (chi-squared = 18.47, df = 9, p is less than 0.05); the younger students were more likely to agree with the statement. For instance, 100% of the 31 to 40 age group agreed or strongly agreed with the statement whilst 22% of the 41 to fifty age group either disagreed or were neutral regarding the statement.

Country of Birth

The chi-squared test procedure was applied according to whether the student was born in Australia. It was found that this variable was not statistically significant with respect to the 17 statements included in the above-mentioned table.

Employment Status

The chi-squared testing was also applied to the employment status of the student. It was not found to be significant except in the following case:

?? Regarding the statement "the lecturers of the MBA motivated me to do my best work" was found to vary significantly with employment status (chi-squared = 16.64, df = 6, p is less than 0.05); in particular, none of the respondents in part-time employment disagreed with the statement, however, around 9% of students in full-time employment or those not working disagreed with the statement.

Computation of means

Another method of statistically analysing the student agreement data is to compute the mean agreement with the various statements, using the Likert-type Scale (1 = strongly disagree and 5 = strongly agree). Table 2 shows the mean and standard deviation of each of the 17 statements.

Table 2: MBA Students Mean Agreement with Statements

Statement	Mean Agreement	Std Dev.
1. The lecturers of the MBA motivated me to do my best work	3.70	.64
2. The lecturers put a lot of time into commenting on my work	3.32	.87
3. The lecturers made a real effort to understand difficulties I was having with my work	3.38	.91
4. Lecturers normally gave me helpful feedback on how I was going	3.46	.87
5. Lecturers were extremely good at explaining things	3.37	.82
6. Lecturers worked hard to make their subjects interesting	3.53	.78
7. The MBA developed my Problem-solving skills	3.90	.63
8. The MBA sharpened my analytical skills	4.10	.60
9. The MBA helped me develop my ability to work as a team member	4.10	.60
10. The MBA helped me feel confident about tackling unfamiliar problems	4.14	.57
11. The MBA improved my skills in written communication	4.00	.72
12. The MBA helped me to develop the ability to plan my own work	3.76	.76
13. Overall I was satisfied with the quality of the MBA course	3.76	.71
14. The MBA degree will assist me when I start my own business	3.67	.91

15. The MBA will assist me to help my present/future employing organisation to diversify its business	3.88	.67
16. The probability of starting a new Business is greater than 50%	3.16	1.11
17. The probability of contributing ideas towards the diversification of an existing business is greater than 50%	3.92	.80

Source: Authors

Table 2 shows the top three statements with the highest-level agreement include the following:

?? The MBA helped me feel confident about tackling unfamiliar problems.
?? The MBA sharpened my analytical skills.
?? The MBA helped me develop my ability to work as a team member.

In contrast, Table 2 shows that the following three statements elicited the weakest agreement from the students:

?? The probability of starting a new business is greater than 50%.
?? The lecturers put a lot of time into commenting on my work.
?? Lecturers were extremely good at explaining things.

Calculation of mean agreement

Calculation of mean agreement further provides an excellent opportunity to compare differences of mean values segmented by various demographic and other variables. For instance, such inferential analysis on the 17 statements was undertaken according to whether the MBA students changed their opinion about skills they intended to develop subsequent to their enrolment in the program. This analysis did not yield statistically significant results except in the following cases:

Skills

The significant findings showed:

?? Students who had changed their opinion about skills acquisition were more inclined to agree with the statement that the MBA helped them to develop the ability to plan their work (mean = 4.05) in comparison to those who had not altered their opinion about skills (mean = 3.54,t = 2.43,p is less than 0.01).

?? Students who had not changed their mind about skills acquisition, subsequent to their enrolment, were more likely to agree with the statement “The probability of starting a new business is greater than 50%” (mean = 3.38) than those who had changed their opinion (mean = 2.82, t = 1.82,p is less than 0.05).

Country of Domicile

Similar testing was undertaken according to whether the students were local or international. Statistically significant results were obtained only in the following cases:

?? International students were more likely to agree that the lecturers put a lot of time into commenting on their work (mean = 3.71) in comparison to local students (mean = 3.07,t = 2.48,p is less than 0.01)
?? Local students were more likely to believe that academics made real efforts to understand difficulties the students faced in their academic work (mean = 3.61) in comparison to international students (mean = 3.06,t = 2.02,p is less than 0.05).

?? International students more strongly agreed that the MBA assisted them to develop their ability to work as a team member (mean = 4.29) in comparison to local students (mean = 3.96, t = 1.73,p is less than 0.05).

Enrolment status

The statements were tested according to the enrolment status of the students. Again no statistically significant results were found except in one case:

?? In particular, full-time students more strongly agreed that the MBA improved their skills in written communication (mean = 4.33) in comparison to part-time students (mean = 3.89,t = 1.82,p is less than 0.05).

Gender

Analysis was then undertaken according to the gender of the students. Statistically significant results were noted in the following cases:

?? The female students more strongly agreed that the lecturers were extremely good at explaining things (mean = 3.78) relative to their male peers (mean = 3.29,t = 1.64,p is less than 0.05).

?? Similarly female students were more likely to agree that academics worked hard to make their subjects interesting (mean = 3.89) in comparison to male students (mean = 3.41,t = 1.64,p is less than 0.05).

?? The male students more strongly agreed that the MBA will assist them to help their present/future employer to diversify their business (mean = 4.03) in comparison to their female counterparts (mean = 3.44, t = 2.35,p is less than 0.05).

Age

Statistical testing was then undertaken according to the age of the respondents. This variable was found to be statistically significant in the following cases:

?? Students aged between 21 and 30 years were more likely to agree that the academics of the MBA program motivated them to do their best work (mean = 4) in comparison to students aged between 41 and 50 years (mean = 3.22, t = 2.41,p is less than 0.05). On the same statement, there was greater agreement by 31 to 40 age group (mean = 3.76) than the 41 to 50 years students (mean = 3.22, t = 2.16,p is less than 0.05).

?? Similarly the younger students (those aged 21 to 30) yielded stronger agreement (mean = 3.89) that academics were extremely good at explaining things than was the case with either the 31 to 40 age group (mean = 3.28,t = 2.01,p is less than 0.05) or the 41 to 50 age group (mean = 3.22, t = 2.24,p is less than 0.05).
?? Again the younger students aged 21 to 30 more strongly agreed that the MBA helped them feel confident about tackling unfamiliar problems (mean = 4.50) than was the case with the 31 to 40 age group (mean = 4.16, t= 1.82,p is less than 0.05) or the 41 to 50 age group (mean = 3.78,t = 1.86,p is less than 0.05).

?? The 21 to 30 age group more strongly agreed that the MBA improved their skills in written communication (mean = 4.44) than was the case with the 31 to 40 age group (mean = 3.84,t = 2.28, p is less than 0.05).

?? The youngest age group was more likely to agree that the MBA degree will assist them when they start their own business (mean = 4.33) then either the 31 to 40 age group (mean = 3.48, t= 2.84, p is less than 0.01) or the 41 to 50 age group (mean = 3.56, t = 1.73,p is less than 0.05).

?? In a similar way, the youngest age group more strongly agreed that the probability of starting a new business is greater than 50% (mean = 4.00) in comparison to the 31 to 40 age group (mean = 3.03, t = 2.43,p is less than 0.01) or the 41 to 50 age group (mean = 2.63, t = 2.74,p is less than 0.01).

Employment status

The data was analysed according to the employment status of the respondents. Again no statistically significant results were obtained except in one case:

?? It was found that the MBA students who were not working more strongly agreed that the probability of them starting a new business is greater than 50% (mean = 3.70) in comparison to those students working full-time during the MBA studies (mean = 2.88, t = 2.15,p is less than 0.05).

Qualitative Analysis

Entrepreneurial and intrapreneurial skills

The MBA students responded to a question regarding the development of entrepreneurial and intrapreneurial skills within the MBA program. Two percent felt that the MBA course should develop only entrepreneurial skills, with nearly 8% believing that only intrapreneurial skills should be developed, and the majority (83%) wanting both entrepreneurial and intrapreneurial skills development. The residual

(7%) expressed an interest in the MBA program developing entrepreneurial, intrapreneurial and other unstated skills in the program.

This finding could indicate that business managers are expected to be both entrepreneurial and innovative within their organizations and could give support to the latest literature showing existing large organizations develop new business ventures within their business units as shown by Orica (Fazzino and Sheldrake, 2003).

1) *Prior to commencing the MBA, what were the main skills you intended to develop?*

Overseas: Age between 31 – 50 years (2 females, 18 males) All Indian only I Chinese, I German).

Verbal and written communication and presentation skills (most popular), gaining of knowledge and technical expertise, business and marketing, analytical, finance, team working, leadership, computing, entrepreneurial and innovative thinking, opportunity screening, business plan writing, HRM, administrative acumen.

Local: Age (31-40 years predominantly) (6 females, 27 males)

Management (most popular), strategy formulation and implementation, leadership of innovation and technology, financial (most popular), IT, leadership (most popular), and strategy, marketing, project management, networking, overall business knowledge and acumen, HR knowledge, relationship management, evaluate business opportunities, unsure, generic business skills.

Finding: Prior to commencing the MBA, the main skills the overseas students intended to develop were communication and presentation skills whereas the local students, wanted management, financial, and leadership skills. This was the case for both the males and females in each group.

2) *Subsequent to enrolment in the MBA have you changed your opinion about the skills you intended to develop:*

Overseas: Age between 31 – 50 years.
None, communication to presentation and writing skills x 2 from marketing, no (most popular), finance changed to soft inter-personal skills, project management, contact with oneself and others from it skills.

Local:
Broader management skills have been acquired, - not necessarily related to innovation, greater people and innovation focus, business strategy from just personal leadership and finance (most popular), financial from management leadership and organizational, evaluation and opportunities in the business environment, leadership style improved, leadership, management strategy and finance, more strategic less analytical, more self confident, commercially aware, socially active, wider thinking, ability to analyse and make more informed decisions, no.

Finding: Overseas students did not change their opinion about the skills they intended to develop which were communication and presentation skills whereas for local students those who had not been specific earlier changed from broad management skills to leadership and finance. Similarly for males and females.

3) *Explain why E and I should be developed*

Overseas: Age between 31 – 50 years
Both because people take up work in both corporate and self-employment and skills for both are identical to understand processes, because they are both necessary, for gaining sustainable competitive advantage companies require to be innovative and to seek new opportunities constantly, necessary to understand business.

Local: Age between 31 – 50 years
Because the students are drawn from both field of entrepreneurship and innovation, exposure to new possibilities, there is too much on start-ups, intrapreneurial skills needed for existing organizations, to ensure understanding of current business practices, balance, employment, both E and I to be diverse, leadership needed for a CEO role, competitive advantage, important for business development and personal growth, I for making change in organizations which is very difficult, new market development and reinventing the organization.

Finding:
Both overseas and local students agreed that both E and I skills were required in today's business environments. Similarly for male and female. There was more focus placed on the intrapreneurial rather the entrepreneurial skills, which if they wanted, they would do an MEI.

3) *Examples of how you will apply these skills in your workplace*:

Overseas: Age between 31 – 50 years
Introduce and manage change, relate better to others, measure end enhance productivity better, effective working in groups succinctly present your ideas to other s with no communication gap, through inter- personal and personal skills, business knowledge, improve upon costing and forecasting of next years budget, finding new opportunities for the company, building new business, manage different parts of the company, leadership and fellowship, management systems, start-up a company, innovative thinking, mission statement and vision of company, leadership, communication and motivate others these are most popular(most popular).

Local: Age between 31 – 50 years
Execute a knowledge base, development of strategies, maximize business success, knowledge transition and creating an innovative culture, differentiation, marketing and business strategy, change management, personal development, consulting, group development, financial and organizational development, all round business acumen, leading teams, business planning, budget management, set up a personal diary plan to apply in the daily workplace, start-up a business (most popular), use in own business, building culture, promote non-standard thinking, promote training, improve leadership (most popular), new product implementation, problem solving, promote new ideas.

Finding:
The overseas students stated they would apply E and I skills in their workplace to motivate others and through their leadership and communication. Local students stated they would apply E and I skills in start-ups and to improve their leadership. Similarly for males and females.

Strengths and weaknesses of the MBA program

Strengths of the MBA in terms of intrapreneurial skills development

Overseas: Age between 31 – 50 years
Organization development stream is strong, financial (most popular) management, faculty are experienced, some industry knowledge, working in teams, interpersonal skills/ communication and public speaking skill development, encouraging critical and analytical and focused thinking, organizational behaviour (most popular), teaching innovation and management, good contents and subjects and methodology, evolve leading and following skills and to establish new ventures, practical skills, promotion of independent thinking, focus on innovation and soft skills is high quality

Local:
3) Opportunity evaluation and development, finance subjects, action learning, strategy, personal awareness, 1) leadership stream (overwhelmingly most popular), 2) finance stream (most popular), practical, experiential, business planning, marketing, assignments, use of syndicate groups.

Finding:
Both the overseas and the local students sited the financial and the leadership streams as being the strengths of the MBA in terms of intrapreneurial skills development.

Strengths of the MBA in terms of entrepreneurial skills development

Overseas: Age between 31 – 50 years
Opportunity scanning, risk taking is encouraged, that there is no single way, org development is again taught well, name of the institute and positioning itself as being entrepreneurial, strong grounding provided in evaluating opportunities and in being consistent in business proposal, to develop business idea and start-up businesses, organisational behaviour, finance and organizational behaviour courses, assignment relating to opportunity exploration, OB, finance, strategy, opportunity evaluation, organizational behaviour and finance most popular.

Local:
1) Opportunity evaluation (most popular), and development, networking, business planning, lecturers with practical experience, focus on identification and execution, strategy development, overview of business environment, 2) finance (most popular), enhanced creativity, very street smart, analytical skills, develop ideas, marketing, lecturers and their work experience

Finding:
The overseas students sited opportunity evaluation, organizational behaviour and finance as the strengths of the MBA in terms of entrepreneurial skills development whereas the local students sited only opportunity evaluation and finance.

Weaknesses of the MBA in terms of intrapreneurial skills development

Overseas: Age between 31 – 50 years
Marketing and business development lack depth and academic rigor, more emphasis on finance and strategy needed, sessional lecturers are normally not of good standard, doesn't sufficiently explain how to use intrapreneurial skills, lack of case studies and simulations, some overlap i.e. business planning and opportunity evaluation, too much discussion, no emphasis on economics, insufficient practical application, lack of exposure to detailed managerial environment i.e. visiting organizations lack of depth (most popular).

Local:
Nothing (most popular), international students bring very little to the course, lack of case studies, no focus on SME development, lecturers do not have corporate background, too much waiting in group work, leadership subjects are too theoretical, course structure interaction focused on end assignment rather than class learning, administration, lack of depth in strategy development business models, never enough time to cover everything, occasionally difficult to link learning to real world and its complexities, too much emphasis on manufacturing not enough on service sector, too much overlap in subjects e.g. opportunity evaluation, business planning, marketing and strategy, not enough guest lecturers from industry, lack of corporate structure discussion, assumptions that intrapreneurship is welcomed in all organizations, too many HR subjects and shortage of assessment subjects such as risk assessment or statistical assessment, learning how to break don barriers without being conceived as nonconformist, lacks detail, there is a lot of talk of innovation but no different from other MBAs except less statistics, lack of case studies, lack of in-depth discussion on real topics and ways of application, too much theory and not enough practical application, focus on assignment requirement leads to lack of time for class discussion, not enough time to do everything, too many group assignments (most popular).

Finding:
The majority of the overseas students sited lack of depth as a weaknesses of the MBA in terms of intrapreneurial skills development whereas local students stated that there was too much theory and not enough practical application, focus on assignment requirement lead to lack of time for class discussion, not enough time to do everything, too many group assignments.

Weaknesses of the MBA in terms of entrepreneurial skills development

Overseas:
Lack of depth in teaching entrepreneurial skills, sessionals normally not of good standard, lack of opportunity to learn from feedback and apply what we learn, more practical elements could be introduced, too much to read and study in short period, no

time for reflection, business planning skills, not enough emphasis on thinking outside the box, punished for creative presentations, lecturers should bring in their experiences and examples instead of students, less real life Australian cases, more focus on start-ups instead of building up existing businesses, insufficient time (most popular), lack of guest lecturers who are experts and /or are investors.

Local:
Not enough industry based lecturers and relevance to the real world, not enough exposure, of entrepreneurial skills development, too much focus on entrepreneurial skill development, too much waiting during group work, too much focus on assignments, nothing, lecturers are not entrepreneurs, not useful in all organizations, business planning and entrepreneurial strategy are disappointing, lack of entrepreneurial guest speakers (most popular), no practical skills development, it is product focused, if I wanted entrepreneurial skills I would MEI, no information on cost ($$) of experimenting in real time, over marketed (most popular).

Finding:
The majority of overseas students stated insufficient time as a weakness of the MBA in terms of entrepreneurial skills development whereas local students identified a lack of entrepreneurial guest speakers and that the program was over marketed.

Discussion

The statistical findings showed that the teaching quality in the MBA program is high (83% - 96%) and indicates high quality student learning as shown in the literature (Ramsden, 1995). However, the quality of teacher's feedback at 79% with 21% not being happy with the feedback received from academic staff is an area that could be improved.

Statements referring to students attaining high skills development was high (92% - 98%) in particular communication, problem solving, entrepreneurial and innovation skills. Statement fifteen refers to the probability of starting a new business with 72% of respondents reporting that there was more than a 50% chance of them starting up their own business.

Chi-square analysis revealed significant relationships between independent demographics variables such as age, gender and country of domicile including Southeast Asia and Australia and dependent variables of teaching and learning. In relation to preparedness for entrepreneurial activities, statistical testing suggests that male students were more likely to engage in intrapreneurial activities, whilst younger MBA students and MBA students who are not working were more likely to start a new business.

Prior to commencing the MBA, the main skills the overseas students intended to develop were communication and presentation skills whereas with the local students, wanted management, financial leadership skills. This was the case for both the males and females in each group. However, subsequent to their enrolment in the MBA overseas students did not change their opinion about the skills they intended to develop which were communication and presentation skills whereas for local students

those who had not been specific earlier changed from broad management skills to leadership and finance. Similarly for males and females.

Overwhelmingly, the results showed that the majority (83%) believed the MBA program should develop both entrepreneurial and intrapreneurial skills. Both overseas and local students agreed that entrepreneurial and intrapreneurial skills were required in today's business environments. Similarly for male and female. There was more focus placed on the intrapreneurial rather the entrepreneurial skills which if they wanted, they would do a Master of Entrepreneurship and Innovation. The overseas students stated they would apply entrepreneurial and intrapreneurial skills in their workplace to motivate others and through their leadership and communication whereas local students stated they would apply entrepreneurial and intrapreneurial skills in start-up businesses and to improve their leadership. Similarly for males and females.

Both the overseas and the local students cited the financial and the leadership streams as being the strengths of the MBA in terms of intrapreneurial skills development. In relation to strengths of the MBA in terms of entrepreneurial skills development, the overseas students sited opportunity evaluation, organizational behaviour and finance as the strengths of the MBA in terms of entrepreneurial skills development whereas the local students sited only opportunity evaluation and finance.

The majority of the overseas students sited lack of depth as a weaknesses of the MBA in terms of intrapreneurial skills development whereas local students stated that there was too much theory and not enough practical application, focus on assignment requirement lead to lack of time for class discussion, not enough time to do everything, too many group assignments. In terms of weaknesses of the MBA, the majority of overseas students stated insufficient time as a weakness of the MBA in terms of entrepreneurial skills development whereas local students identified a lack of entrepreneurial guest speakers and that the program was over marketed.

Based on the findings of this research, the implication for management educators is to develop programs that consider the trends in organizational restructuring where many current organizations develop new business ventures within the organization itself and managers working within those contexts require entrepreneurial and intrapreneurial skills to function effectively.

Conclusion

Academics who develop and deliver management education curricula clearly play a significant role in the change process confronting management education. The content and role of management education is changing to include entrepreneurship and innovation with evidence that student cohorts value these skills.

Whilst the sample was representative of the MBA enrolment cohort, its limitations are that it is both small in size and a convenience sample. Future studies would benefit from a larger and more diverse sample including those who had completed their MBA some years ago.

The relatively high satisfaction rate with teaching and learning elements of the MBA program is an important finding of the study. In Australian universities, the MBA is entirely fee paying, driven by the need for the institutions to be more entrepreneurial and diversify the funding sources away from the public purse. Therefore it is important that the students are satisfied with the learning and teaching outcomes of the program. Further the university of the 21st century needs to be more market and service focussed, if it is to be successful both economically and academically especially in the light that younger students appear to be more entrepreneurially inclined than older students. This suggests that universities ought to be change agents and to be encouraging students to develop their business ideas sooner rather than later, whether that idea is to start a new business or innovate within an existing business.

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Academic Staff's Perception of Valuing and Rewarding Good Teaching: A comparative study

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INTRODUCTION

What constitutes good university teaching is difficult to define specifically, as the definition varies with different stakeholders. However, there is general agreement that good university teaching should:

??improve the quality of students' learning;
??develop skills of lifelong learning for students;
??enable students to contribute to the well-being of society.

The interest in good university teaching is an outcome of the rapid expansion of higher education in the past decade. Over the past decade, governments throughout the world, in response to the Knowledge Age of the 21st century, have implemented policies that open up university study to all that qualify for entry, that is, university study for the masses in place of the traditional function of university for the elites.

This "massification" of university entry has resulted in high enrolments of a wide range of students with varying abilities and interests. However, the increase in student population has led to a worsening of student-staff ratio and resource availability in universities. That this situation had occurred was due to the so-called efficiency drive the government has imposed on universities through its steady state and often declining funding policy. As a result, stakeholders, particularly employers and students, are concerned about the quality of higher education provision, as universities began to cut budgets in all aspects of education provision in order to balance the declining public funding.

Stakeholder concerns have led to an unprecedented focus on the quality of higher education provision currently. One of these foci is on the quality of teaching, that is, good teaching. Academics on the whole feel that universities, especially the

traditional universities, do not properly recognise good teaching. They perceive that most of the recognitions, rewards and promotions accorded to staff are for excellence in research. Academics who are good teachers are often overlooked. Inevitably, in times of public funding cuts, resource allocation to teaching is further reduced while research either maintains a steady state or improved institutional funding. Yet the university is a place of learning for both students and academics. Students learn more effectively through good teaching. Therefore, it is timely now to address the question of how to encourage and reward good teaching.

In the case of China, there is a strong tradition of honouring teachers and valuing education for over 2000 years. However, this tradition was annihilated to a large degree during the Cultural Revolution from 1966 to 1976. During this period, teachers were branded as the lowest of low in society and formal education was devalued, unless the peasants were the teachers.

With the "open door" policy in 1978 and the rapid economic take-off since then, valuing education has progressively been on a comeback trail. Concomitantly, the status of teachers is receiving some recognition in recent years. The government has recognised that China has to lead or at least catch-up with the developed world in research and development in all fields if it were to sustain its present rate of economic growth and to compete successfully in the global and knowledge-based economy. To achieve that it has to develop an educational policy that encourages good teaching and academic excellence. Good teaching comes from valuing and rewarding excellence in teaching.

It would be interesting therefore to examine how academic staff in universities in China perceive good teaching as compared to those in developed countries, given the above background to the study.

AIM AND OBJECTIVES

Given the variations in perception of what constitutes good teaching, the aim of this paper is to examine the perception of valuing and rewarding good teaching from two countries (China and Australia) of different cultures. The case study in China is based on a perception study of academic staff in Wenzhou University while the Australian study was based on the findings of the Australian Committee for the Advancement of University Study (1995).

The objectives of this paper are to:

??Discuss the literature on the status of teaching mainly in the developed industrialised world;
??Describe the teaching environment in China and compare it with the developed world;
??Discuss the findings of the perception study of academic staff on valuing and rewarding good teaching in Wenzhou University;
??Compare the Wenzhou study with the Australian Committee for the Advancement of University Study.

METHODOLOGY

Two approaches were used to fulfil the objectives of this paper, namely,
??Literature survey of existing knowledge on valuing and rewarding teaching in universities; and
??Administration of a survey questionnaire on academic staff perception concerning valuing and rewarding good teaching using a case study of a private.

Most of the literature surveys were sourced from the Western traditions, owing to the plethora of research undertaken in this area. Interest in valuing and rewarding teaching, however, is a growth area in Asia, as governments are starting to fund public universities based on outcomes performance. At the same time students are questioning the value for money of their fee-paying education. As far as this research project is concerned, it can be said that this field of research is one of the pioneering studies in China at present.

The survey instrument, which is an adaptation of a commissioned project of the Committee for the Advancement of University Teaching (CAUT), comprises two parts containing 65 statements in total. Part 1 elicits views, based on a five-point Likert scale, about valuing and rewarding good teaching in the case study institution. Part 2 deals with views, based on a five-point Likert scale, about improving the quality of teaching. The differences between the CAUT commissioned project and this study lies in the scaling of responses (namely, the former used a two-point scale while the latter, a five-point scale) as well as containing some questions, which are more appropriate to China's higher education environment. For comparative purposes, the 5-point Likert scale was moderated to a two-point scale so that the CAUT data can be compared. This is done by dividing the mid-point value into half and allocating each half to the sum of values of the two points on each side of the scale.

Four hundred (400) questionnaires were distributed to the academic staff of Wenzhou University. Two hundred and ten (210) completed questionnaires were returned. This represented 52.5 per cent of the academic staff in the 11 schools that encompass Wenzhou University.

Wenzhou University was chosen because it is a privately funded comprehensive university. Invariably, the demand for good teaching from the academic staff is paramount as good teaching contributes significantly to branding the university as a good university, a factor that is crucial in attracting and sustaining student enrolment at a commercial feasibility level. The university is located in the city of Wenzhou, located on the southeast coast of China.

This is an exploratory study of one case study of a private university but, nonetheless, the findings should be able to reveal how the academic staff perceive what constitutes good teaching and how it can be appropriately rewarded. In addition, these findings, derived from a different culture and educational system, are used to compare the findings of the Australian Committee for the Advancement of University Study (1995), in order to elicit similarities and differences in staff perception. It is also the

intention of the authors to use this study to lay the foundation of a broader and more comprehensive and representative study in China in the future.

LITERATURE REVIEW

Interest in revitalising the status of teaching as an important university function and a central aspect of the academic profession has gathered momentum for the past decade. This interest was due to the following public expressions of concerns from various stakeholders of higher education:

??Students and employers questioned the quality of undergraduate teaching (e.g. Philp et al, 1964; McInnis, 1993), as universities face public funding cuts and expansion of student enrolments;
??Appointments and promotions in UK and Australian universities still relied heavily on research excellence while good teaching was often ignored (e.g. HEQC, 1994);

As a result of these public concerns, public funding for universities in UK, Australia and North America has shifted increasingly to performance and innovation in teaching. Universities are providing more opportunities for academic staff development in teaching and increasingly creating incentives for academics to perform highly in teaching. One of these incentives, in the case of Australia, is the annual National Teaching Award, which was created to recognise excellence in teaching.

Aside from teaching awards, the Australian Vice-Chancellors' Committee (AVCC, 1993) has published a list of institutional indicators to show whether a university is committed to good teaching. These include the following:

??Mission statements which express the educational ethos of the institution and how it may be realised;
??Administrative practices, and practices associated with teaching related services, which support the educational ethos of the institution;
??Adequate resources for effective teaching and learning;
??Allocation of responsibilities, which allows staff time to consult with individual students, and to conduct teaching as a scholarly activity instead of as a routine task;
??A policy on academic appointments that encourages the recruitment of individuals with demonstrated teaching commitment, and on tenure and promotion which give teaching parity of esteem with research;
??Policies on matters affecting student learning opportunities;
??Policies addressing ethical issues which might arise in the relationship between staff and students;
??Professional experience or study leave programs which allow for focus on teaching, course design, teaching materials and curriculum development;
??Assistance provided to all staff in defining and enhancing their teaching role;
??The availability of funds for exploring, developing and implementing new approaches to teaching aimed at improvement of student learning;

??Publications which describe and commend effective teaching and learning environments within the institution;
??Mechanisms for identifying and funding learning enhancement strategies;
??Procedures for the review of new and existing courses to ensure that programs of study are coherent, properly organised, and that they provide students with learning experiences that meet the program's aims;
??Procedures for regular contributions from students and external groups into the development of teaching and learning practices and the design or review of courses;
??A framework for enabling an institution to review and change institutional practices related to the quality of teaching and learning, and for managing change.

Universities possessing the above institutional indicators may create an environment conducive for good teaching. However, good teaching depends on the personal attributes of the teacher. As indicated by Brain (http://www.bygpub.com/eot/eot1.htm) a teacher must possess four core qualities in order to establish good teaching, namely, command of knowledge, skills to transmit the knowledge, ability to make the material interesting and relevant, and a deep-seated respect for the students. Leblanc (1998) further expanded Brain's four core qualities and identified good teaching as containing the following characteristics:

??Good teaching is about substance and treating students as consumers of knowledge;
??Motivating and teaching students how to learn and doing so in a manner that is relevant, meaningful and memorable;
??It is about listening, questioning, being responsive and remembering that each student and class is different;
??Good teaching is about being flexible, fluid, experimenting and having the confidence to react and adjust to changing circumstances;
??It should be entertaining;
??Good teaching requires humour in the classroom;
??It is about caring, nurturing and developing minds and talents;
??Good teaching is supported by strong and visionary leadership, and very tangible institutional support;
??It is about mentoring between senior and junior academic staff, teamwork and being recognised and promoted by one's peers;
??Good teaching is about having fun, experiencing pleasure and intrinsic rewards.

While we know the conditions for good teaching, little is known about the perception of academic staff towards valuing and rewarding good teaching. In 1995, Ramsden et al filled this gap by conducting a perception survey of academic staff towards valuing and rewarding good teaching in six representative Australian Universities. Ramsden and Martin (1996) observed that over 90 per cent of the universities make explicit reference to valuing and rewarding the development of teaching in their institutional missions and strategies. Despite this, academic staffs habitually identify a mismatch between what they experience and what universities claim when it comes to recognizing and rewarding teaching (Ramsden et al, 1995).

This study is an attempt at duplicating the Ramsden et al's (1995) study by adapting their questionnaire and applying it to academic staff employed at Wenzhou University.

As indicated in the aim and objectives of the paper, this study is to explore academic staff's perception in a cultural environment vis-à-vis the Australian context.

OVERVIEW OF VALUING AND REWARDING TEACHING IN CHINA

Traditionally, teachers were highly regarded and respected in China. Teaching was a noble and honourable profession, which held high status in society since the time of Confucius, some 2500 years ago. In fact, honouring and respecting teachers is one of the two fundamental tenets of Confucian education associated with the wholesome development or self-cultivation of a person; the first, being filial piety. Teachers, according to Confucius, are important role models in imparting knowledge based upon research rigour and in leading by examples of moral conduct in their way of life. Teachers were looked upon as guardians of students' academic and personal development as well as their career. In short, teachers were expected to establish leadership (?), guardianship (?) and educating/nurturing (?) relationships with students. Thus, the role of teachers in Chinese society was highly esteemed and honoured by all, and receiving a good education has been recognised as an essential element for upward mobility even in China today.

Since the Cultural Revolution (1966-76), the social status of teachers has greatly eroded. However, in recent years, with China experiencing rapid economic development for the past two decades, the government has elevated the status of teachers through better pay and service conditions. The reversal of teachers' status was due to the rapid economic development and China's membership in the World Trade Organisation, which have exposed the country to international investments and competition. This exposure has revealed structural and sectoral weaknesses of its economy in terms of managerial capacity, availability of highly trained knowledge workers in sufficient quantity and ICT infrastructure. To rectify these weaknesses, higher education reforms have been implemented in which universities are to play a major role in increasing the supply of highly trained knowledge workers and moving the economy to one based on knowledge and skills.

The reforms require universities to play an active and leading role in promoting better knowledge transfer from academia to commercial markets aside from the traditional role of generating and disseminating new knowledge. This is because the present industrial R&D capabilities are still limited, despite the growing number of local and international corporations operating in the country. Universities must also respond rapidly to the increasing social demand for life-long learning, as higher education services are increasingly in high demand and they are growing to become a major knowledge-intensive industry in the near future.

All these requirements entail that universities become efficient and effective in its delivery of learning and that the quality of learning outcomes is assured. Under these conditions, the pressure for teachers to perform well in their teaching has no doubt increased from the government, administrators and students.

The government has set in place measures to evaluate and reward academic performance in teaching, research, public service and administration. As in elsewhere in the world, high-flyers in academia are immensely rewarded through bonuses (including improved service conditions). While the base salary remains the same, the variation in bonuses has caused high deferential in total take-home pay and service conditions amongst staff across institutions and regions. This policy of valuing and rewarding academics is aimed at transforming the higher education system from an input- and supply-driven system to an output- and demand-driven system that is suitable for operating in a global market economy. At the same time, students are beginning to question the value of the education they received in relation to their academic and professional abilities to compete in the job market upon graduation. The same question is also raised by the employers, who employ graduates as value-adding resources and not as cost components in terms of additional training provision.

Given these demands on the teaching staff in terms of their ability to provide good teaching, it is relevant to examine how academic staff perceives their present conditions on valuing and rewarding good teaching. The findings below are based on a case study survey of Wenzhou University, one of a thousand over private educational institutions in China. To reiterate, these findings are indicative only at this stage, as the study is in an exploratory stage.

SURVEY RESULTS

The discussion of the results of the perception study about practices recognising good teaching in Wenzhou University comprises four parts:

1. Views of academic staff about valuing teaching and research in their respective department and university;

2. Academic staff's perception towards valuing good teaching in academic appointments;

3. Perception towards valuing good teaching in promotion and tenure decisions;

4. Views about improving the quality of teaching.

The results of the Wenzhou study are compared with the results of the Australian study of Ramsden et al. Differences in value that "is" (perceived value) and "should be" (preferred value) of the two studies are also compared to reveal an indicative expression of dissatisfaction towards the institutional policies and practices related to recognising good teaching in the two countries of different cultural traditions.

Views of academic staff about valuing teaching and research

Academic staff in Wenzhou University viewed that there is no significant difference in value given to teaching and research in their respective department and university (Table 1). Analysis of differences between the value that "is" and "should be" (Table

2), however, shows staff preferred the university to place greater value in teaching as compared with research. It is also interesting to note that about 20 per cent of the staff perceived that good teaching and research has no or least value at all, and to a large extent they are satisfied with their perceived status quo.

As a private university, Wenzhou University's primary function is to deliver academic courses and training based on market demand as well as to brand itself in a way that it could attract students to sustain its profit-making objective. One of the ways is to establish the institution as a centre of excellence for teaching and learning. The emphasis on good teaching is in no doubt an important branding activity of the university. This is supported by the ever-increasing number of student enrolments annually. Nonetheless, staff preferred to have further improvement made to teaching.

Table 1 Valuing of Teaching and Research in the University

Items		Is Valued **(%)**			
		No/least valued		Some/Great value	
		Ramsden	Wenzhou	Ramsden	Wenzhou
Teaching	In your University	29	20	37	69
	In your Department	22	11	51	81
Research	In your University	6	17	84	73
	In your Department	9	11	77	75
Items		Should be Valued **(%)**			
		No/least valued		Some/Great value	
		Ramsden	Wenzhou	Ramsden	Wenzhou
Teaching	In your University	<1	10	95	85
	In your Department	<1	3	95	83
Research	In your University	<1	5	90	81
	In your Department	<1	4	90	83

Table 2 Differences between value that is and should be

Items		Differences between value that is and should be (%)			
		No/least valued		Some/Great value	
		Ramsden	Wenzhou	Ramsden	Wenzhou
Teaching	In your University	28	10	-58	-16
	In your Department	21	8	-44	-2
Research	In your University	5	12	-6	-8
	In your Department	8	7	-13	-8

Unlike the Wenzhou study, the Ramsden et al study indicates high dissatisfaction towards the practice of valuing good teaching in both the department and university, as reflected in the high negative scores of -44 and -58 respectively (Table 2). This difference between the Wenzhou and Ramsden et al studies is explained by the research tradition of universities in Australia. Research excellence brings prestige, funding and academic high-flyers to the university, in addition to the fact that research

can be quantified. Good teaching can only be qualified and is seldom recognised. As such, more than 20 per cent of the respondents in the Ramsden et al study indicated that good teaching has no or least value (Table 1). This is despite the fact that emphasis has been placed on valuing good teaching in policy and practice in the higher education sector for the past decade.

In China, the Chinese Academy of Sciences and key universities (the designated 100) undertake most of the research. Most of the universities are teaching (or Normal) universities, which basically emphasise on teaching. Most importantly, valuing teaching has been a long established tradition in China. Further, in the case of private universities, such as Wenzhou University, the main business is teaching. Therefore, in contrast to the Ramsden et al study, the perceived and preferred value of valuing teaching and research in the Wenzhou respondents showed only marginal variation, indicating some form of congruency between the perceived and preferred value related to valuing teaching in the institution.

Perception of valuing good teaching in academic appointments

Respondents in Wenzhou University were asked to consider nine perceived and preferred items related to academic appointment in terms of its value to good teaching (Table 3). A quarter or more of the respondents expressed that the quality of research and publication, service to the University, service to the community, teaching undergraduates, quality of students learning, experience in teaching and scholarship have no or least value in influencing academic appointments in their University. Over 60 per cent of the respondents, however, perceived that the nine items related to academic appointment have some or great value. They perceived that the university gives particular emphasis to qualifications in teaching (82 percent) and quantity of research and publication (80 per cent) when making academic appointments.

As contrasted with the perceived criteria, 90 per cent of the staffs cited quality of research and publication, assuring quality of students learning and teaching undergraduates as the most preferred criteria (Table 3). This revelation shows a mismatch between the university's criteria and staffs' criteria for making academic appointments. Looking from the pedagogical point of view on the two contrasting preferences (between employer and employees), the latter appears to be more practical in terms of benefiting students' learning.

Analysis of differences between the values that "is" and "should be" indicates that overall, staffs are dissatisfied with the criteria used for academic appointment (Table 4), especially relating to assuring the quality of students learning and the quality of research and publication. As mentioned earlier, student enrolments are critical to the private university's financial survival, and staffs recognise that the assurance of quality of students learning is catalytic to the sustainability of continuous high enrolments. In fact, the institutional criteria (qualifications in teaching and quantity of research and publication) for academic appointments appeared not to receive the ire of staffs as reflected by the low marginal differences between that "is" and "should be" (Table 4).

Table 3 Perception of Academic Appointment

Items	Is Valued (%)			
	No/least valued		Some/Great value	
	Ramsden	Wenzhou	Ramsden	Wenzhou
Quality of research and Publication	11	30	69	63
Quantity of Research and Publication	5	16	80	80
Service to University eg Admin	29	27	32	66
Service to the Community	53	28	16	66
Teaching undergraduates	37	28	31	67
Quality of students learning	44	34	24	60
Qualifications in teaching	59	18	16	82
Experience in teaching	41	26	23	69
Scholarship-Advanced Level of Knowledge In Discipline	13	25	58	67
Items	Should be Valued (%)			
	No/ least valued		Some/Great value	
	Ramsden	Wenzhou	Ramsden	Wenzhou
Quality of research and Publication	1	5	89	90
Quantity of Research and Publication	15	14	45	84
Service to University eg Admin	16	16	41	75
Service to the Community	20	10	43	85
Teaching undergraduates	1	4	86	90
Quality of students learning	2	6	88	90
Qualifications in teaching	20	12	47	85
Experience in teaching	6	7	65	87
Scholarship-Advanced Level of Knowledge In Discipline	<1	6	89	89

When the Wenzhou study is compared with the Ramsden et al study, variations in the perceived and preferred selection criteria for academic appointments can be discerned (Table 3). Over 50 per cent of the staffs in the Ramsden et al study perceived that "qualifications in teaching" and "service to the community" are not or least valued in their universities, followed by "assuring the quality of students learning" and "experience in teaching", when making academic appointments. In the case of Wenzhou, no more than 30 per cent of the staffs felt this way. However, there is congruency in perception (80 per cent respectively) when it comes to the giving great value to the criteria on "quantity of research and publication" and quality of research and publication. The rest of the criteria show divergence in perception between the two studies.

As for the preferred criteria, there is some form of convergence in views as to what is "not/least valued" or "some/great value" in the two studies (Table 3), except for the following:

??"not/least valued" – qualifications in teaching

??"some/great value" – quantity of research and publication, service to the university, service to the community, qualifications in teaching and scholarship in the discipline

Table 4 Differences between Perception of the value that is and should be in Academic Appointment

Items	Differences in value that is and should be (%)			
	No/least valued		Some/Great value	
	Ramsden	Wenzhou	Ramsden	Wenzhou
Quality of research and Publication	10	25	-20	-27
Quantity of Research and Publication	-10	2	35	-4
Service to University eg Admin	13	11	-9	-9
Service to the Community	33	18	-27	-19
Teaching undergraduates	36	24	-55	-23
Quality of students learning	42	28	-64	-30
Qualifications in teaching	39	6	-31	-3
Experience in teaching	35	19	-32	-18
Scholarship-Advanced Level of Knowledge In Discipline	12	19	-31	-22

In the Wenzhou study, staffs' dissatisfaction with the selection criteria for academic appointments is far lesser than those of the Ramsden et al study in Australia (Table 4). The divergence in dissatisfaction, while occurring in all the nine criteria, is most marked in the following criteria: assuring quality of students learning, quantity of research and publication, qualifications in teaching and teaching undergraduates, where the Australian counterpart had a much higher mismatch of that "is" and "should be" than Wenzhou staffs.

Perception of valuing good teaching in promotion and tenure decisions

The criteria used for determining promotion and tenure are similar to that of academic appointment, with the exception of an additional item "attitude towards teaching". As shown in Table 5, a quarter or more of the staff perceived that the criteria, "quality of research and publication", "service to the community", "attitude towards teaching", "teaching undergraduates", "assuring quality of students learning", "experience in teaching" and "scholarship in one's discipline" have no or least value when it comes to deciding promotion and tenure in their university. This perception of Wenzhou

staff seemed to compare well with that of the Ramsden et al study, except that a relatively higher percentage of Australian staff expressed the same feeling.

Institutional similarities between Australian universities (85 per cent) and Wenzhou University (83 per cent) are found in the respective staffs' close agreement that the following criteria are of some/great value in deciding promotion and tenure: "quantity of research and publication" and "quality of research and publication" (Table 5). Aside from that, over 60 per cent of the Wenzhou staff (range from 63 to 77 per cent) perceived that the other eight criteria are of some/great value in influencing promotion and tenure, as compared with a relatively low percentage of Australian staff.

Table 5 Perceptions of Valuing Characteristics in Promotion and Tenure Decisions

Items	Is Valued (%)			
	No/least valued		Some/Great value	
	Ramsden	Wenzhou	Ramsden	Wenzhou
Quality of research and Publication	11	25	71	75
Quantity of Research and Publication	4	17	85	83
Service to University eg Admin	22	23	41	77
Service to the Community	50	27	17	73
Attitude to teaching	-	26	-	74
Teaching undergraduates	38	37	27	63
Quality of students learning	46	36	22	64
Qualifications in teaching	59	17	15	83
Experience in teaching	38	27	26	73
Scholarship-Advanced Level of Knowledge In Discipline	16	29	56	71

Items	Should be Valued (%)			
	No/least valued		Some/Great value	
	Ramsden	Wenzhou	Ramsden	Wenzhou
Quality of research and Publication	<1	3	91	93
Quantity of Research and Publication	13	11	52	86
Service to University eg Admin	12	17	48	77
Service to the Community	20	11	43	82
Attitude to teaching	-	14	-	86
Teaching undergraduates	1	6	86	87
Quality of students learning	2	4	87	91
Qualifications in teaching	23	11	45	85
Experience in teaching	6	6	68	89
Scholarship-Advanced Level of Knowledge In Discipline	1	5	88	96

In analysing the perception of satisfaction/dissatisfaction towards the criteria of deciding promotion and tenure, the overall pattern in Wenzhou seems to indicate

general satisfaction as indicated by the relatively low value differences between that "is" and "should be" in the some/great value category (Table 6). In fact, the criterion "service to the University" appeared to fully satisfy staffs' preference. This was followed by "qualifications in teaching", "quantity of research and publication", "service to the community" and "attitude towards teaching." The criteria that most concerned staff (indication of dissatisfaction) are "assuring the quality of students' learning", "scholarship in one's discipline", "teaching undergraduates", "quality of research and publication" and "experience in teaching" in their order of priority.

These concerns were similarly expressed by Australian staff, but more strongly in the Ramsden et al study. This is shown in Table 6 by the wide differences in values that "is" and "should be" for the following criteria related to promotion and tenure (in their order of dissatisfaction): "assuring quality of students learning " (-65 per cent), "teaching undergraduates" (-59 per cent), "experience in teaching" (-42 per cent), "scholarship in own discipline" (-32 per cent), "qualifications in teaching" (-30 per cent), and "service to the community" (-26 per cent). It can be seen that "assuring the quality of students' learning" has been identified as the criterion of most concern to staff in both Australian and Chinese universities when deciding promotion and tenure.

Table 6 Differences in Perception of Value that is and should be in Promotion and Tenure Decisions

Items	Differences in value that is and should be (%)			
	No/least valued		Some/Great value	
	Ramsden	Wenzhou	Ramsden	Wenzhou
Quality of research and Publication	10	22	-20	-18
Quantity of Research and Publication	-9	6	33	-3
Service to University eg Admin	10	6	-7	0
Service to the Community	30	16	-26	-9
Attitude to teaching	-	12	-	-12
Teaching undergraduates	37	31	-59	-24
Quality of students learning	44	32	-65	-27
Qualifications in teaching	36	6	-30	-2
Experience in teaching	32	21	-42	-16
Scholarship-Advanced Level of Knowledge In Discipline	15	24	-32	-25

Views about improving quality of teaching

Twenty-nine items related to improving the quality of teaching have been selected from the 31 items contained in the Ramsden et al study. Table 7, an extraction from Table 8, shows the methods and strategies that were perceived to be the least effective in their order of ranking by staffs of Wenzhou University and Australian universities. As can be seen, variations in perception occurred between the two groups concerning methods that are least effective for improving the quality of teaching. For example, Wenzhou staff (40 per cent) considered the conduct of voluntary student ratings of individual teaching performance for promotion and/or extra financial rewards as the

most ineffective strategy for improving the quality of teaching. In the Australian case studies (Ramsden et al, 1995), the use of reprimands and disciplinary procedures to punish unsatisfactory teachers was considered to be the least effective (72 per cent).

The explanation to the contrast in perception of the two case studies could be explained by differences in the cultural traditions. In a long established tradition where teachers and elders are honoured and education is highly valued, such as in China, students have a tacit understanding that teachers are beyond reproach, at least by them. It is also a traditional social etiquette that requires everyone to know his or her place or position in society. Hence, having students evaluating teachers' performance is still an unfamiliar exercise.

On the other hand, in Australia, students have been evaluating staff performance for the past decade. With the current drive to improve the quality of teaching, students' evaluation of good teaching is a frequent feature of Australian universities. Thus, the Australian staffs have accepted this annual procedure of student evaluation, even though one third of them thought the method as least effective. However, Australian staffs are not used to the methods of reprimands and disciplinary procedures to punish unsatisfactory teachers. Hence, 72 per cent of the staffs stated that this method is the most ineffective for improving the quality of teaching. But in the case of the Chinese staffs, this method was more acceptable than the methods listed in Table 7.

Table 7 Methods perceived to be the least effective for improving the quality of teaching

Rank	Least effective methods perceived By Wenzhou staff	Ramsden et al study – least effective Method perceived by Australian staff
1	-conduct voluntary student ratings of individual teaching performance for promotion and/or extra financial rewards (39 %)	-use reprimands and disciplinary procedures to punish unsatisfactory teachers (72%)
2	-build and apply tests and test banks (32%)	-undertake internal quality audits of teaching (46%)
3	-implement system of course credits on the basis of flexible educational system (28%)	-establish faculty or departmental teaching committees to oversee teaching (40%)
4	-undertake internal quality audits of teaching (27%)	-conduct surveys of employers' perceptions of graduates (35%) -introduce a system of performance related pay for teaching (35%)
5	-use reprimands and disciplinary procedures to punish unsatisfactory teachers (26%)	
6	-establish faculty or departmental teaching committees to oversee teaching (25%) -conduct student evaluation of individual teaching performance using results for feedback to the staff member	--conduct voluntary student ratings of individual teaching performance for promotion and/or extra financial rewards (33%)

Methods that are considered to have some/great effects on the quality of teaching are shown in Table 8. Over 80 per cent of the Wenzhou staffs perceived the following methods (in their order of ranking) to be effective in improving the quality of teaching:

??Award prizes for good teaching to individual academic (88 per cent)
??Arrange courses familiar to teachers (87 per cent)
??Take more account of teaching when appointing staff (86 per cent)
??Create a working environment in which staff can gain intrinsic satisfaction from teaching students (86 per cent)
??Allocate the University budget so that teaching is treated equally with research (85 per cent)
??Provide more scope for staff to set teaching goals and pursue own interests (85 per cent)
??Introduce a system of performance-related pay for teaching (85 per cent)
??Ensure heads of departments give more praise for good teaching (84 per cent)
??Conduct more activities of teaching and research (83 per cent)
??Remove obstacles to enjoying teaching, such as excessive workloads (82 per cent)
??Interview graduates for information related to practical use of their specialities so that the colleges are informed of the feedback (82 per cent)
??Conduct surveys of employers' perceptions of graduates (81 per cent)
??Provide funding for staff to set up research programs to improve teaching quality (81 per cent)
??Take greater account of teaching in promotions (81 per cent)
??Provide more teaching development grants and fellowships (81 per cent)

It should be pointed out that the Wenzhou staffs (over 60 per cent) considered all the 29 methods have some/great effects on the quality of teaching. As indicated in the above listing of the most preferred methods, rewarding good teaching extrinsically is the most preferred choice of Wenzhou staffs. The strategies for rewarding good teaching include "award prizes for good teaching to individual academic", "take more account of teaching when appointing staff", "introduce a system of performance-related pay for teaching", "ensure heads of departments give more praise for good teaching", "provide funding for staff to set up research programs to improve teaching quality", "take greater account of teaching in promotions" and "provide more teaching development grants and fellowships". As can be seen, the preferred strategies are tied to tangible rewards (such as monetary, promotions, recognition by the authorities and grants).

Awarding prizes for good teaching to individual academic has been a common practice for a long time in China. That it has been the most preferred method for improving good teaching by Wenzhou staffs appeared to reinforce this institutional practice in universities across China. It could also be due to the fact that they are most familiar with this method. However, such awards, especially those at the provincial and national levels, are embedded with ideological overtones or political correctness, in addition to the standard pedagogical criteria of good teaching.

Methods related to intrinsic incentives and rewards which staffs preferred in promoting good teaching are "arrange courses familiar to teachers", "create a working environment in which staff can gain intrinsic satisfaction from teaching students",

"allocate the University budget so that teaching is treated equally with research", "provide more scope for staff to set teaching goals and pursue own interests", "remove obstacles to enjoying teaching, such as excessive workloads", "interview graduates for information related to practical use of their specialities so that the colleges are informed of the feedback" and "conduct surveys of employers' perceptions of graduates". These preferences can pose major challenges to the university, particularly a private one, where investors of the university are equally or more concerned with their return on investment than their staffs' satisfaction with the incentives and rewards system for good teaching. Nevertheless, these concerns and preferences should be considered in the context of the university's strategic plan, as recognition of good teaching helps in motivating staffs and producing satisfied students/customers.

Table 8 Perceived Effects on Quality of Teaching

Methods	No/Few effects		Some/Great effects	
	Ramsden	Wenzhou	Ramsden	Wenzhou
Take more account of teaching when appointing staff	10	10	68	86
Arrange courses familiar to teachers	-	12	48	87
Remove obstacles to enjoying teaching, such as excessive workloads	5	16	85	82
Award prizes for good teaching to individual academic	29	12	43	88
Provide more scope for staff to set teaching goals and pursue own interests	17	14	55	85
Conduct more activities of teaching and research	-	15	49	83
Introduce a system of performance related pay for teaching	35	15	39	85
Take greater account of teaching in promotions	6	19	80	81
Provide more teaching development grants and fellowships	23	18	46	81
Build and apply tests and test banks	-	32	-	67
Implement system of course credits on the basis of flexible educational system	-	28	-	69
Establish informal courses based teaching for academic staff, not leading to qualifications	29	21	42	78
Ensure heads of departments give more praise for good teaching	18	14	61	84
Conduct surveys of employers perceptions of graduates	35	17	35	81
Interview graduates for information related to practical use of their specialties so the colleges are informed of the feedback	-	18	-	82
Provide funding for staff to set up research programs to improve teaching quality	13	19	64	81
Conduct student evaluation of individual teaching performance using results for feedback to the staff member	18	25	55	72

Conduct voluntary student ratings of individual teaching performance to promotion and/or extra financial rewards	33	39	39	61
Undertake internal quality audits of teaching	46	27	23	71
Educate academic managers in leadership skills related to effective teaching and learning	22	21	54	78
Encourage more collaboration and discussion about teaching among staff in academic departments	14	21	62	77
Provide general workshops and seminars on teaching and learning	21	18	46	76
Provide academics more time to develop and introduce innovations in learning and teaching	13	24	76	76
Introduce mentoring programs in which experienced teachers help less experienced ones to develop their skills	15	21	62	79
Create a working environment in which staff can gain intrinsic satisfaction from teaching students	8	14	79	86
Allocate the University budget so teaching is treated equally with research	13	15	74	85
Establish faculty or departmental teaching Committees to oversee teaching	40	25	27	75
Improve performance in research	31	21	41	77
Use reprimands & disciplinary procedures to punish unsatisfactory teachers	72	26	11	71

While over 60 per cent of the Wenzhou staffs perceived that all the 29 methods have some/great effects on the quality of teaching, the Australian staffs (over 60 per cent) considered that only ten methods have any substantial effect (Table 8). The methods identified in their order of preferences were:

??Remove obstacles to enjoying teaching, such as excessive workloads (85 per cent)
??Take greater account of teaching in promotions (80 per cent)
??Create a working environment in which staff can gain intrinsic satisfaction from teaching students (79 per cent)
??Provide academics more time to develop and introduce innovations in learning and teaching (76 per cent)
??Allocate the University budget so that teaching is treated equally with research (74 per cent)
??Take more account of teaching when appointing staff (68 per cent)
??Provide funding for staff to set up research programs to improve teaching quality (64 per cent)
??Encourage more collaboration and discussion about teaching among staff in academic departments (62 per cent)
??Introduce mentoring programs in which experienced teachers help less experienced ones to develop their skills (62 per cent)
??Ensure heads of departments give more praise for good teaching (61 per cent)

The Australian staffs' (85 per cent) most preferred method ("remove obstacles to enjoying teaching, such as excessive workloads") for effecting good teaching was intrinsic vis-à-vis the extrinsic preference ("award prizes for good teaching to individual academic" and "introduce a system of performance-related pay for teaching) of the Chinese staff. However, casting aside the order of preference, the Chinese staff (82 per cent) considered this method was just as significant in influencing teaching effectiveness in the context of excessive workloads. Nevertheless, the focus on extrinsic rewards by the Chinese staffs can be attributed to the mismatch between academic salaries and what academics can earn in the private sector, even though academic salaries have increased proportionately relative to those in the private sector in recent years.

Like their Australian counterparts, the high enrolments and funding cuts have increased the workloads of staffs in Chinese universities dramatically. In many cases, teachers were asked to deliver courses beyond their field of expertise (implied in the method "arrange courses familiar to teachers" – 87 per cent). The situation is exacerbated in private universities where the demand for high return-on-investment from investors is paramount to the financial viability of the institution.

IMPLICATIONS OF THE STUDY AND CONCLUSION

This study explores academic staff's perception of valuing and rewarding good teaching in a Chinese private university. It aims to provide some preliminary findings on:

??How academic staffs perceived their university's attitude towards good teaching?
??What procedures or processes they prefer their university to institute in order to enhance the quality of teaching in their institution?
??How do their perceptions compare with the Australian study by Ramsden et al?

Implications of the study

1. Valuing of teaching and research in the University

Staffs at Wenzhou University are generally satisfied about their University's policy on teaching and research. This is in contrast with the Ramsden et al's findings, which showed that Australian staffs are highly dissatisfied with the low status given to teaching as compared with research. However, Wenzhou staffs still see the need for the University to focus more on teaching as well as research.

Therefore, Wenzhou University needs to strengthen its policy on valuing and rewarding good teaching and develop strategies for establishing an environment conducive for good teaching. This means the University needs to enhance its institutional research capabilities that are able to sustain excellence in teaching and learning.

2. Perception of Academic Appointments

A quarter or more of the staff in Wenzhou University felt that the University does not value "scholarship in one's discipline", "experience in teaching", "service to the University", "service to the community", "teaching undergraduates" and "quality of students learning" when making academic appointment. Yet these selection criteria are crucial to the University's competitiveness in the private higher education marketplace, as employing teachers with teaching abilities and experience would attract students to the University as well as enhance its image for excellence in teaching. The University should review its appointment policy and strengthen the following selection criteria for academic appointment: "quality of students learning", "quality of research and publication", "teaching undergraduates", "scholarship in one's discipline" and "service to the community". These criteria showed the greatest mismatch between what is perceived and what is preferred by the staffs.

3. Perceptions of valuing characteristics in Promotion and Tenure

A quarter or more of the staff felt that the University placed no/least value to "teaching undergraduates", "quality of students learning", "scholarship in one's discipline", "experience in teaching", "service to the community", "attitude to teaching" and "quality of research and publication" when it comes to promotion and tenure of staff. Majority of the staffs also felt that their preference for "quality of students learning", "scholarship in one's discipline" and "teaching undergraduates" as criteria for promotion and tenure was neglected by the University. This perception has wide implications on the quality of teaching, and the University needs to rectify the situation before it starts losing the competition for student enrolments and quality teaching staff.

4. Perceived Effects on Quality of Teaching

Wenzhou staffs considered all the 29 methods are important in influencing the quality of teaching, particularly methods that are extrinsic and tangible. This is not surprising in an economic environment of high GNP growth for the past two decades and where material consumption and accumulation increases annually. While wages in universities have increased for the past decade, it has not caught up with the higher wages in the private sector, except in the top 100 universities in China where high-flying academics receive salaries and perks similar to those offered by international corporations.

In the case of Wenzhou University, the proclivity of staff towards extrinsic and tangible rewards for good teaching could pose a financial challenge as it is a private university, which means that it also has to make a good ROI for its investors. It is important therefore for the University to develop policies and strategies, which enhance the quality of teaching based on understanding staff's perception of institutional processes that are considered effective or ineffective in improving the quality of teaching in the University.

Conclusion

The main conclusions of this study are that:

??Variations occurred between the views of Chinese staffs and Australian staffs regarding what is perceived and what is preferred in their assessment of institutional processes related to valuing and rewarding teaching. Differences in educational systems, culture and objectives may account for these variations in views. Nevertheless, there is a general agreement in the two cultural groups that their respective universities have not paid enough emphasis on teaching. This is particularly so in the Australian study and less so in the Chinese study. Therefore, the respective universities should demonstrate their commitment to excellence in teaching by strengthening its policies and processes to serve that goal. If this commitment is not genuinely implemented system-wide on the ground, the quality of teaching would be affected as teachers would invariably follow the directives of their paymaster.

??The GIGO effect of "garbage in, garbage out" applies to staff appointment. For a university to have good teaching staff, the selection criteria should be streamlined to effect good teaching outcomes as suggested by the staff. In this case, the selection criteria should be widely publicised and easily available for reference as well as implemented per se, without any hidden agenda. It is generally accepted that good teachers will deliver good teaching.

??The above conclusion also applies to promotion and tenure. Staff would accept the recognition and reward processes, and standards for good teaching as appropriate provided they are revised accordingly when required. Like in making academic appointment, the university authority should publish explicit criteria related to good teaching for promotion and tenure. Based on this case study, it calls for a review of existing institutional procedures so that staffs are more amenable to effecting good teaching in the university.

??In promoting good teaching, the University should consider using all the 29 methods for developing its policy and objectives for establishing excellence in teaching in the university. An important consideration is to recognise good teaching using tangible rewards or of extrinsic value. Perhaps in the later years when the standard of living of staff is at par with developed countries, they would prefer intrinsic rewards similar to those in Australia. Nevertheless, the university needs to create a supportive environment for good teaching.

??Finally, without quality management processes, policy development and strategy implementation to establish good teaching in the university, good teaching will not prevail. Institutional research is one of the keys in establishing quality management processes. As universities throughout the world attempt to imitate the entrepreneurial model of capital accumulation practised by corporations, it is appropriate to conclude this article by stating that valuing and rewarding good teaching establishes the basic foundation of an entrepreneurial university. The cement for this foundation comes from rigorous implementation of an institutional research strategy.

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