Journal of Institutional Research

South East Asia

JIRSEA

Volume 2 Number 2

2004

ISSN NO: 1675-6061

All papers are refereed by two appropriately independent, qualified experts and evaluated according to:

? Significance in contributing new knowledge
? Appropriateness for the Journal
? Clarity of presentation
? Technical adequacy

SEAAIR

SOUTH EAST ASIAN ASSOCIATION FOR INSTITUTIONAL RESEARCH

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Editorial

The six articles in this issue were papers presented to the second and third SEAAIR conference held at Kuala Lumpur and Bangkok in 2002 and 2003 respectively. Emerging from the contents of these papers is a common thread, which is relevant for the planning and management of institutional change. As made necessary by the advent of the Knowledge Economy and its associated innovations in technology, especially in ICT and biotechnology, as well as the higher education reform agenda of governments in South East Asia and other parts of the world, institutional change requires the conduct of IR in all aspects of higher education teaching, learning and research to be of high fidelity, operability, quality and functionality. The six papers, four of which are case studies, discuss both the broad and specific issues of IR as related to quality educational provision and perception of stakeholders experiencing institutional change, such as the introduction of online teaching, e-administration and new curricula, for example. Results and conclusions of these papers provide useful guidelines and challenges for institutions to consider in the light of declining government funding and environmental factors associated with technology and knowledge advancement, all of which create the pressure for institutions to become more innovative and entrepreneurial in their operations.

The fourth SEAAIR conference, to be held in Wenzhou, China from 21 to 23 September 2004, will be dealing with the theme of "Entrepreneurial University of the 21st Century". It will provide a broad spectrum, from IR perspectives, on how universities face the challenges of the 21st century by becoming more entrepreneurial in their operations. We invite readers of JIRSEA to attend this conference.

Editor
Ng Gan Che

EDUCATION REFORM– A LOOK AT ASIAN PERSPECTIVES: A keynote address to the Third SEAAIR Conference 2003 at Bangkok

Nirwan Idrus

INTRODUCTION

Increasingly, education in general and higher education in particular, are recognized as imperatives in the economic development and survival of a country. Education is no longer the privilege of the few. It is also no longer done for its own sake. Education has become a means to an end and a necessary tool for establishing, improving and sustaining human capital. The increasingly educated expect more of and from education as time goes.

In addition, technology and especially computer and computer-based technology, have changed our world in every conceivable way and more. Their impacts particularly in information transfer and analysis are phenomenal as proven by the substantive claim that the knowledge we have accumulated in the last three decades using computer technology is equivalent to all the knowledge we have collected in 2000 years without it. It is further predicted that within the next forty or fifty years we would increase our current knowledge by a hundred times (Cheng, 2000).
Such pervasive development must inevitably affect education in all respects, from the curriculum to its delivery. Importantly, the speed of which governments and people respond to and anticipate the changes will be a determining factor of success and even survival.

Because of all these, fundamental changes or reforms in education generally and in higher education in particular are necessary and should be actively pursued. Necessary conditions for this to happen obviously include general literacy, numeracy, computer literacy as well as supportive ambiance in the form of mature social and educational policies and stable and developing economy.

In this respect, the phenomenal improvement in Vietnam should be taken note of. From the lowest ranked amongst 13 countries in South East Asia, Vietnam had managed to overtake three or four countries above it to sit in number 9 out of 13 by 2001/2. Its "dual-pragmatism" and ability to balance the forces of free-market and the discipline of socialism have catapulted it to be a country that must be reckoned with (Dang, 2000).

On the other hand, "democratization" in Indonesia, while seemingly freeing the masses from the shackle of dictatorship, has had debilitating effects on education generally and will of course be further felt in years to come. Since the start of democratization and exacerbated by the Asian Monetary Crisis in 1997/8, some 22 million Primary School age children had either dropped out or never started school (Indonesian Business News, 2002). This is approximately the total population of Malaysia and slightly more than the population of Australia. We cannot even begin to imagine what impacts this will have on Indonesian human capital in the next ten to twenty years and the sorts of education reforms that would be needed to address the problems there.

EDUCATION REFORMS

It is not surprising that when one talks about Education Reform, the immediate thoughts that come to mind are the government-induced legal changes in education that have been discussed in Parliaments or

Cabinets and that have been extensively researched, analysed and dealt with by some sort of government Commission comprising politicians, education experts and educationalists.

The result of such reforms of course are the various overt changes in the way we treat students, the amount of money we extract from them in order for them to attend any of the education institutions and even what and how the students are taught. Being formally enacted, these reforms or changes are therefore legal. Non-compliances are therefore dealt with in a legal manner and appropriate government sanctions are brought to bear on the non-complying institutions.

This paper contends that the definition of Education Reform should resemble the evolutionary nature of education itself. It is the change that happens because societal pressures are brought to bear only to the extent that the institution wishes to recognize them. There is no obligation on the institution. It must however bear the consequential outcomes of the decision that it chose in not recognizing the need to change. The only sanction or penalty is one that society itself applies to that institution through reduced enrolment of students for example. Such effectively self-imposed sanction, however, is real in the institution's bottom line. This would make such institutions rethink their decisions on this.

With reducing funding for education from the government, it is likely that education reforms of the enacted form will be reduced as well, and the one that is alluded to above will increasingly play a more important part in education development around the world. It is with this that this paper deals.

In this case then, Education Reform may be defined as:

Changes to the teaching, learning and delivery of education with the intention of improving all associated elements in order to meet and satisfy the requirements of all education stakeholders within a region, a country and around the world.

The important word here is "all", in all aspects and all stakeholders. It is indeed a taller order than the enacted education reform where requirements are well stated and measures of compliances and non-compliances are provided.

While seemingly expansive and unachievable, the definition above in fact identifies closely with quality, another target that education has been attempting to reach over the last decade or so with mixed success. Perhaps integrating the two will increase the potential of actually improving the quality of education. Continual improvement and satisfying customers are basic quality pursuits and these are an integral part of the definition above. In its simplest form, Quality is defined as *the standard of service or products that satisfy the customers' requirements* or *fitness for purpose.*

INSTITUTIONAL RESEARCH (IR)

IR is a term that describes a multidisciplinary professional pursuit that aims to benefit, assist and advance research leading to improved understanding, planning and operations of institutions of post-secondary education (SEAAIR, 2003). These include the advancement of post-secondary education and the improvement of quality of post-secondary educational outcomes.

Perhaps to encapsulate the extent of IR the following definition may be used:
All investigative, theoretical and practical work on all aspects of higher education institutional activities to maintain and sustain the highest level of fitness for purpose or quality for all its stakeholders and for its own competitive survival in the face of increasingly unpredictable future.

Again, the critical word here is "all", in all aspects of higher education institutional activities and in for all its stakeholders. From the discussion in the previous paragraph, this definition aligns itself well with the expectations of quality, in that it covers the totality of activities and caters for the total customer base.

In essence, IR is the essential tool to measure the effects of the education reform desired and the tool to guide the actions to effect that education reform in the best possible way.

WHY EDUCATION REFORMS?

Education in general and higher education in particular are affected by and impact on their environments. Thus changes in the environment, which include the expectations of the stakeholders, will create changes in higher education if it wishes to be current and if it wishes to meet the requirements of those who purchase and interact with it. In turn, changes to higher education or education reforms will create productivity reforms, social reforms and an increase in the stakeholders' expectations among other things.

Pervading all of these is of course technology, the application of scientific knowledge that had changed our world irrevocably within a relatively short time. Technology has affected every facet of human life and is therefore only natural to affect education in all its aspects also.

In the case of *Economic changes*, the following might be relevant to consider in the Asian scenario:

a. political changes
b. cultural changes
c. micro-economic changes
d. the Asian monetary crises (1997/8)
e. the notion of survival through higher education
f. technology tariffs

Let us look at each of the above and observe how they may initiate the education reforms we defined in the previous section.

a. Political changes

The seventies and eighties have been globally historic. Asia also had a good share of political changes and even upheavals during those decades. This paper contends that those political changes inevitably impact on education in those countries and thus created education reforms there.

The unification of Vietnam after over a dozen years of conflicts and wars between the North and the South cannot but create an overwhelming opportunity for reforms in various areas including education. The *doi moi* [*] that resulted from the unification clearly identified education as the number one government priority. This decision had in fact proven fruitful within a short time when Vietnam moved from number 13 and last in the list of ASEAN (Association of South East Asian Nations) countries to number 10 in two years (PERC, 2002) in education.

The fall of Marcos in The Philippines, the re-integration of Hong Kong with the PRC, the democratization of Indonesia following the fall of Suharto, and the increasingly omnipresent open market

[*] Political Renovation referring to the process of pursuing open market orientation while maintaining the principles of socialism. *Sloper & Le Thac Can, 1995*

practices throughout South East and East Asia have made an indelible impression on how to prepare their human capital and hence education.

Then there was the changing nature of international politics surrounding South East and East Asia. Australia's increasingly more dominant roles in the South Pacific in recent times for example, will inevitably reduce its own importance in Asia. The US's fight against terrorisms had moved international political focus towards West Asia, the Gulf and the Middle East. However, it had also galvanized political and community divisions around the world accompanied by more organized terrors and needless bombings and killings of innocent bystanders. The continued guerrilla skirmishes that had claimed continuous American as well as others' lives in Iraq had also resulted in persistent evaluation of US-British political nexus by many countries in the west and in the east. From the huge demonstrations in London during President Bush's visit there in November 2003, it is clear that anti-American feeling about the war in Iraq was not just shown by Muslims. Such feelings and antipathy will influence people's perception and thinking about American education which had for quite some time been emulated in South East and East Asia through the establishment of many MBA Schools *a'la* America.

The acrimony about Iraq between the US-British axis and the Western European community is further underpinned by the adoption of the Euro by all continental European countries with the exception of the UK, including some of the ex East European and ex USSR new republics. The continental European sphere of influence in Asia and Africa will take more prominence as time goes by and as the Iraq problems escalate evidenced by increased irrational but well planned suicide bombings of US and British interests around the world. Japanese and South Korean nationals have also been victims of the suicide bombings in Iraq. The result of all these whether one likes it or not will inevitably affect the way education develops in those Asian countries.

*b. **Cultural changes***

Cultural and traditional changes due to other factors including exposure to western cultures – through TV, CD and communication technology advances – would normally be more felt by those cultures that were strong and isolated from the former. Asian cultures would be one such example. If these were fads and they affect a minority, the influences motivated by materialism appear to be more profound (Mason, 2001). The nuclear family and the two-income no-children family concepts are beginning to bite into the current Asian generation, to the extent that the Singapore government for one, is extremely concerned by the almost zero population growth among these young couples. The immediate impacts of this are increased disposable income enhancing materialism and opened opportunity for further education. In the latter and by virtue of the increased disposable income, only good quality and purposeful education would be top priorities of this generation.

The increasing number of Asian women who are occupying traditionally men's positions does affect education directly and significantly (Luke, 2000).

Slowly but surely, the above factors will pervade all levels of the local community and changes to education philosophy, practices and delivery will be inevitable.

*c. **Micro-economic changes***

These are changes brought about by the changes in the cultures and traditions affecting families. The higher disposable incomes adduce changes in the home, allowing more opportunities to visit outside their immediate areas and environs, and consequently expose the people to more educational desires. In turn, these create education reforms as we defined them here.

d. The Asian monetary crisis

Undoubtedly, this was an unprecedented shake up of monetary practices in Asia. It showed up weaknesses in financial and economic governance in several Asian countries, but it also affected countries around the world through secondary effects, such as the sudden stops in public construction in those Asian countries.

Various industries in developed nations also suffered as the number of tourists from Asia suddenly dwindled, the number of Asian students studying there were forced to either return home or move to alternative institutions or countries providing similar quality education at much lower costs and Asian spending on luxurious items produced in the west was harshly and forcibly cut down.

Good Corporate Governance (GCG) rose to the top of western governments' priorities and manifested in the enforcement of Corrupt Practices Acts on their Multi-National Companies (MNCs). MBA Schools enforced the study of Business Ethics, for example and NGOs ran seminars after seminars on GCG.

Of course, ethical practices should be taught from Primary school level. Because of the crisis, the study of economics itself would need revamping.

Education reforms abound out of this Asian monetary crisis.

e. The notion of survival through higher education

Economic survival through education in general has been the hallmark of Asian cultures for a long time. Combined with increased materialism and higher disposable income, this notion of survival through higher education is rapidly becoming a reality for many Asians. For these same reasons, they have also become fastidious, selective and versed on what they need and the training and education that will meet these needs.

Again, this simply means that education reforms are inevitable.

f. Technology Tariffs

By *Technology Tariffs,* we mean the impositions put to bear on education by customer requirements emanating from the application of technology, where technology is defined in its broadest sense. These may take the form of accreditation of the institution or its parts or of its courses; third party audits such as ISO 9000 or ISO 14 000 series certifications; quality audit by a government agency with funding consequences, in addition to direct customers' (i.e. students') own quality requirements which could only be satisfied through technology applications.

These "customer" requirements changed not only what is to be studied, but also ***how*** it is studied. Thus, the technology tariffs encompass wider change aspects than any of the other *causes* for education reform.

TECHNOLOGY EXPLOSION AND ITS IMPACTS ON EDUCATION

The explosion in technology is generally acknowledged by the rapidly increasing use of computers in all aspects of our life and the speed by which those uses spread across the world. Internet, email, automatic teller machines (ATMs), asynchronous meetings via email, remotely controlled household or office conveniences as well as medical breakthroughs that had saved many lives by way of better imaging, analyses, magnification, resolution etc. Clearly, the impacts of all these on education are just phenomenal.

These become overwhelming when brought together (Cheng, 2001). For example, the use of internet increased from less than 90,000 (users) in 1992, just over ten years ago, to 40 million in 1996, 170 million in 1999, 414 million in 2000 and is expected to top 1 billion by 2005 and growing at 1 million per month. Education reforms and changes have not kept pace with it, even though a number of countries including in Asia, have moved on to virtual campuses.

A similar *explosion* in global e-commerce has been happening as well. In 1994, global e-commerce was worth US$1.2 billion. This grew to US$ 2.6 billion in 1997 but jumped to US$ 50 billion a year later, and then to US$ 377 billion in 2000. The prediction is that it will be US$ 1,000 billion by 2010, which is one third of current global commerce.

What technology has done is allowed rapid expansion of knowledge and with it wealth. It has been estimated that the knowledge we had gained in the last thirty years is equivalent to that we accumulated over 2000 years, thanks to the computer. The prediction is that by 2050 the sum of knowledge acquired by humans will be 100 times the current amount.

We also have witnessed a cost reduction whenever technology is used in our everyday activities. A typical example is the phenomenal cost savings in modern banking. The cost of transaction processed by a teller was estimated to be $ 1.27, but when one uses the ATM to do the same transaction the cost was $0.27. If the internet is used for it the cost was $0.01. In a similar way purchases through the internet cost a lot less because mainly they significantly reduced overhead and bureaucracy. This should of course lead us to asking what this would mean if applied to education.

In addition, it is a fact that the power of the computer doubles every 18 months or so while its price halved – the so-called Moore's Law. The implications of this on education should be self-evident.

Clearly, education that does not change or reform at similar speed and covering similar expanse would leave a lot to be desired. The reality, however, is that education has not reformed anywhere near the speed or coverage of technology.

The various imbalances between developed and under-developed countries pose further complications. Poverty, over-population, uneven wealth distribution, poor infrastructure, corruption, nepotism and illiteracy are some of the cast iron anchors that keep under-developed and developing countries weighed down in comparison to developed nations. This and the rapid technological development regrettably enlarged the gaps between those two groups of nations. Many South East Asian nations belong to the latter while educational explosion is surely going to happen in this geographical area given the size of its population.

Tragically, while those factors mentioned above are the very factors that need to be addressed by education reforms, they are also the ones that make education reforms difficult. It is therefore an especially interesting problem of educational management and institutional research.

At the same time, the rest of the world increasingly depends on the South East and East Asian regions as markets for their products and services, by virtue of the regions' population size. The regions are already producing more engineers and scientists than in the USA (Cheng, 2001), some of whom may in fact end up working in the developed nations.

LITERARCY ISSUES IN SOUTH EAST AND EAST ASIA

Without immersing ourselves into any debate of what literacy actually means, we can define literacy in several ways. In doing this, there is no intention of belittling the over than 2000-year cultures of Asia that benchmark civilizations as a whole and consequently literacy.

If we use the *World Bank* or *International Agencies* definition, then we see that for example literacy in Vietnam (measured in 1988) was 88%, in Taiwan it is 99% since 1955, in Malaysia and Singapore it is 99% now, in The Philippines and Indonesia, it is around 90% and in most other parts of Asia it is less than 85%. We have to note however, that these measures are based on the native languages of those countries, in which many technological terms are still unknown and un-translatable at a time when global breakthroughs are almost all occurring in languages other than these and that those breakthroughs are fundamental to reforms in education.

Another measure is the percentages of school age persons actually enrolled in studies. While the collected data vary in forms, the message is nevertheless clear. A typical example is given by Lee (2000) about Malaysia. 99% of primary school age children are in school, 83% are enrolled in Lower Secondary Schools, 49% in Upper Secondary schools, 16% in post-secondary and college institutions while 3% in universities. Tan's (2000) figures on Singapore show that 92.8% of 6 to 17 year age group are enrolled in schools, 16% gained admission to universities and 29% gained admission to polytechnics.

The tragedy of the *Monetary Crisis* was suffered worst by Indonesia, politically, financially, socially and educationally. Some 22 million school-age Indonesian children could not afford to attend school or dropped out between 1998 and 2002 (Indonesian Business Review, 2002). Exhortations after exhortation were placed on Indonesian TV and radio encouraging parents to keep their children at school. The reality, however, is that those who were supposed to be concerned were not and others who could help those parents were helping themselves, particularly in the chaotic environment that the country is in (Idrus, 2003). The impacts of such a huge number of un-schooled persons are just unimaginable. 22 million is approximately the population of Australia or Malaysia. This is equivalent to 100% illiteracy in those countries. Can we imagine that the whole population of Australia or Malaysia being uneducated? The other obvious question is of course the impacts of such tragedy on Indonesia's human capital perhaps for the rest of this century. It is also obvious that fundamental education reforms must become mandatory if Indonesia wishes to catch up with her neighbours.

Another measure of literacy is the current educational level of the workforce, for this determines their capability, particularly given the fact that we have entered the knowledge era, an era that is surely underpinned by education. On this measure, Indonesia once again is at the bottom of the rung with 80% of its labour force in 1989 (Ranuwihardjo, 1995) and 70% in 1997 (World Bank, 2000) having only primary school education, while Taiwan for example has only 2.4% of its labour force under this category (Huang, 2001). Given the high literacy levels in Malaysia and Singapore as shown previously and a sustained low level of unemployment, their labour forces are a lot better educated.

The disparate levels of literacy in the regions pose additional challenges to education reforms, as they cannot be standardized across the countries of the regions. These therefore further intensify the need for education reforms particularly in those countries that will still have to catch up.

THE IMPACTS ON INSTITUTIONAL RESEARCH

Employing the definition of IR given previously there is a lot of work to be done. If IR in the developed nations could concentrate on implementing a sort of "finishing touches" on what is already an established

system that only needs fine-tuning, IR in the South East and East Asia needs a lot more. Indeed, some of the required tasks are still unknown due to the enormity of the problems.

However, three aspects of IR that have to be looked at may be identified, namely:

1. The currency of measures of quality (fitness for purpose) in all aspects of higher education teaching, learning and research

2. The currency of quality of data of teaching, learning and research

3. The need for increasingly accurate and rapid data acquisition, analysis and verification to ensure the applicability of recommendations emanating from those data particularly as the changes will need to occur rapidly if the problems and issues discussed earlier are to be resolved and the gaps within the regions and between them and the rest of the world are to be minimized.

So how should IR respond to these challenges? Clearly, it has to increase and improve the use of new- and high-technology data acquisition, data mining and data analysis systems with the objective of effecting on-line real-time improvement methods. It should also anticipate future IR changes and roles through continuously upgraded strategic plan and management. Part of the response must also aim at strengthening the position and roles of IR in those institutions without unnecessarily introducing new costs or increasing expenditures. Because of those responses, IR must assume the role of educating as many institutional staff as possible on IR, its roles in helping them and in turn in helping the institution to improve, develop, grow and survive through first and second mover advantages. The ideal response of course is to empower all staff to create a network of synergistic continuous quality improvement in all aspects of higher education. How this is done, particularly at institutions and in countries in which it poses great challenges, is only a matter of conjecture, but done it must be.

In the case of developing countries, IR therefore takes on new roles and challenges. In addition, it does not have the luxury of time to do them in either. It seems to be an acceptable strategy for the country to prepare its academe for these changes and challenges in IR. As an example, empowerment could be immediately applied while staff is being trained to empower and be empowered (Idrus, 1999d). However, the government and every level of the institution must have the resolve to see through the training and preparation. Herein lies some of the fundamental problems of developing countries alluded to earlier, that impinge on the potential success of this extremely important undertaking.

An encouraging sign, however, has been shown by Vietnam through their *doi moi*, a model perhaps other South East and East Asian countries should explore (Sloper & Le Thac Can, 1995).

An additional challenge is the two-dimensional gap between what is needed in education in the knowledge era and what the case in South East and East Asia is generally. Perhaps partly due to the so-called Asian culture(s) and partly due to prolonged economic exigencies, education in Asia is still dominated by *rote learning* on one dimension at a time when understanding is an absolute norm, and *acceptance* on the second dimension when re-conceptualising is *sine qua non* given the explosions of knowledge and acquisition technology. Harvey (2002) called the move from rote learning to understanding and from acceptance to re-conceptualising, transformative learning. While not all developed nations are already in this transformative quadrant, most are and more importantly, are taking off right from the beginning of formal education at primary school level. South East and East Asia will need to hasten this particular education reform if they wish to both catch up with the time and ensure their survival.

South East Asian countries such as Malaysia, Singapore and Thailand are at the forefront of IR revolution (SEAAIR, 2003) and promise to be leading not only the region's higher education but also the world's engineers and scientists. As early as the mid 80's, then Prime Minister Dr Mahathir of Malaysia set out to establish Malaysia as the hub of higher education in South East Asia. In addition to attracting foreign universities to set up campuses in Malaysia, he also encouraged the establishment of new local and private as well as corporate universities. Telecom Malaysia for example, has the Multimedia University (MMU) located in Kuala Lumpur and Malacca; the Electricity Board has Universiti Tenaga (Uniten) and the highly successful national oil company Petronas has Petronas University, each of which has enrolments in excess of 10,000 students from both Malaysia and overseas. Among local private universities are the International Islamic University of Malaysia (IIUM) and the International Medical University (IMU). The latter works with over 25 international universities around the world and allows students to articulate to them. It celebrated its tenth year anniversary in 2002. To uplift the education level of the whole population, Malaysia set up its Open University (OUM) in 2001. Within two years, it has enrolled 20,000 students. In almost all of Malaysia's universities the pursuit of quality and continuous improvement, two fundamental IR building blocks, is seriously undertaken with a number of them already awarded ISO 9001-2000 certification.

It is therefore more than worthwhile for other South East and East Asian developing countries to take example from Vietnam and Malaysia.

CONCLUSION

In order to move positively forward with education generally and higher education in particular, a revised definition of *education reform* has been offered. Its basic characteristics include the totality of coverage and the continual nature of its occurrence. These are inevitable particularly due to technology explosion and the rapid acquisition and application of new knowledge. Education that is lagging behind these adds no value to the learners.

Rapid growth in technology in particular and industry in general demand continual education reforms and quality improvement. These in turn require institutional research and good management. Indeed, effective education is one that is quality (*fit for the purpose*), student oriented (customer-friendly) and well managed. Well-managed quality education needs, and could only happen with, the support of good IR. Well-managed quality education is likely to produce new knowledge and new knowledge equates to knowledge advantage. In turn knowledge advantage, as we have seen, particularly in relation to the application of technology, brings about economic survival and advantage.

Asia generally and South East and East Asia in particular have inculcated an overwhelming awe and respect for the *teacher* and practiced an *accepting* culture, for generations, resulting in learning by rote and an aversion to questioning the *wisdom* of the teacher or the elders. These values appear to be anachronistic in the era of knowledge and technology explosion. A major education reform and IR development in South East and East Asia will therefore involve transformation in two dimensions, from rote learning to understanding and from acceptance to re-conceptualization. The key to this is in an education system that engages the students and encourages the students to question. While this requirement might be trivial in the west for it is common practice there, it challenges the very core of Asian values. There is therefore a need for a thorough *buy-in* across two or three generations in order to commence this process. Its importance is further underlined by the regions' population size and growth rate, a wrong move on which will affect adversely on human capital worldwide.

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INSTITUTIONAL PLANNING THAT STRIVES TO ACHIEVE EVIDENCE OF TEACHING AND STUDENT LEARNING – A CASE STUDY

Sutee Sujitparapitaya

INTRODUCTION

For the last decade, higher education systems in the U.S. have expanded, involving the creation of new institutions and the growth of existing ones. Higher education has also become more diverse, in terms of types of institutions, types of programs and types of students who enter them (AASCU/NASULGC Enrolment Report, 2002). It has become more international, involving greater student and staff mobility, creating demands for the harmonization of qualifications and the internationalization of curricula. In many U.S. states, higher education has been subject to budget cuts, which are frequently accompanied by changes to funding formulae, which in turn increases the pressure on institutions to seek alternative sources of funding. The changes that have occurred in California are also frequently accompanied by modifications to the mechanisms by which governments seek to steer higher education, frequently involving more institutional autonomy, more competition, and more accountability (Shah and Brennan, 2000).

Neave and van Vught (1991, 1994) suggest that the recent convergence in the regulation of higher education systems has caused the state to reduce its direct controls over higher education in the effort to support greater autonomy, flexibility, and diversity at the institutional level. Therefore, strategic planning processes and institutional assessment have been established to replace the more direct controls of the state. In addition, a growing openness of institutions of higher education to the interests of external constituencies, and a re-balancing of the interests and authority within institutions, has reflected these changes in power and values.

From these perspectives, well-designed strategic planning and institutional assessment are enmeshed with attempts to change values and to empower new interests. There are a number of studies describing approaches and methods of quality assessment at both institutional and national levels (Kells, 1988, and 1992; Vroeijenstijn, 1995). In a recent development, empirically based studies have begun to emerge that examine the impact of quality assessment upon higher education institutions (Frederiks et al., 1994; Brennan et al., 1997; Bauer and Henkel, 1998). It is noted that the terms institutional quality assessment and institutional assessment are used interchangeably in this study.

Very little research has been done to address the effects of quality assessment at the institutional level, which reflects these changes. Therefore, the purpose of this case study is to examine institutional context in combination with that of the national context in the effort to help shape the impact of quality assessment at California State University, Sacramento (CSUS). In-depth analysis is presented to describe the two primary features: Integrated Planning Process and Electronic Institutional (EI) Portfolio.

INTEGRATED PLANNING PROCESS

The integrated planning process at CSUS brings together planning, assessment, and resource allocation. The entire process is driven by the University's Strategic Plan and coordinated by the Council for University Planning (CUP). The Council meets bi-weekly throughout the academic year and provides the linkage between planning, assessment, and resource allocation by:

1. maintaining the University's Strategic Plan and establishing short-term planning objectives,

2. reviewing key performance indicators for the Strategic Plan and assessment data relating to the accomplishment of the long-term goals and short-term objectives, and
3. updating short-term objectives annually, based on its review of the assessment data, to influence the following year's budget allocations.

Figure 1: Integrated Planning Process at CSUS

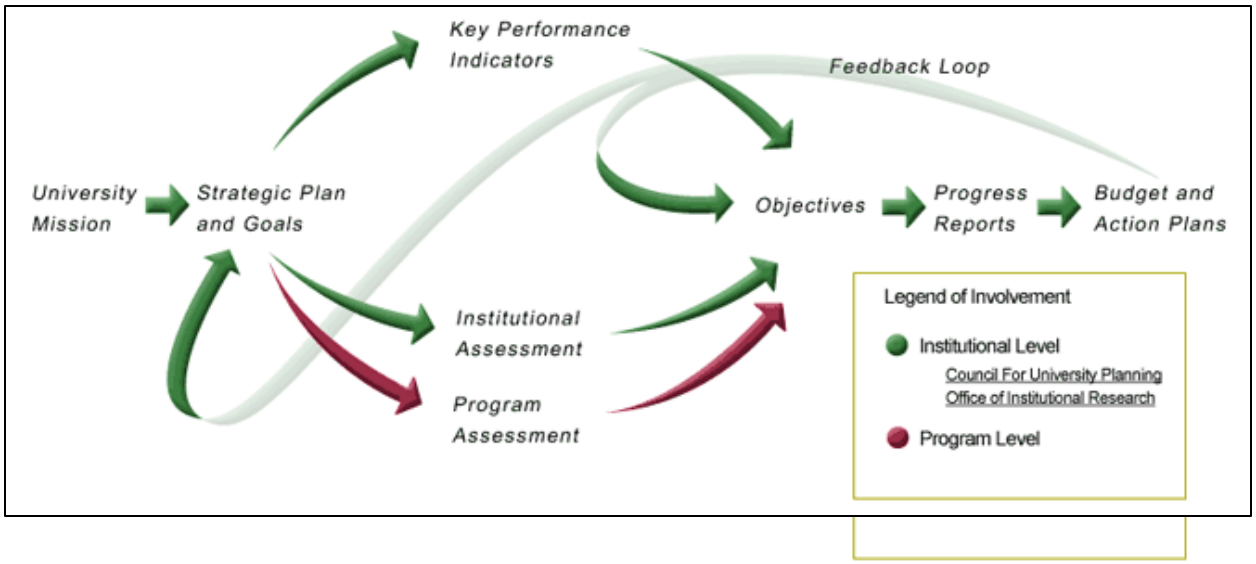
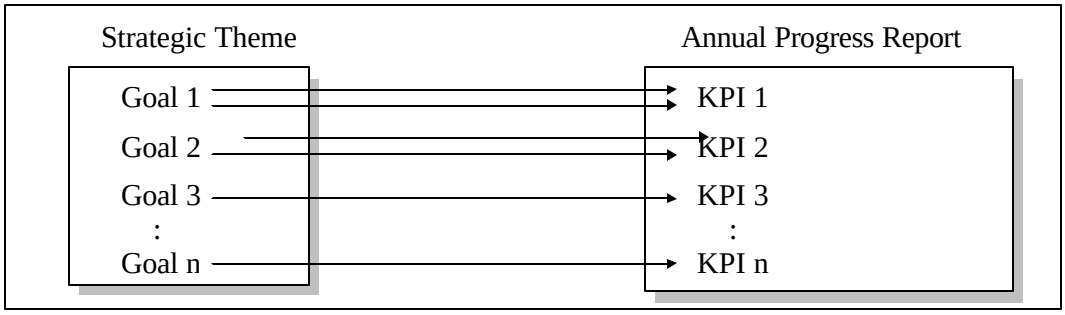


Figure 1 above illustrates the integrated planning process that influences budget allocations and emphasizes ongoing evaluations of our progress toward implementing the Strategic Plan; a result of which, leads to adjustments of planning priorities. This integrated planning process reflects an institutional commitment to using a "culture of evidence" to improve educational outcomes for CSUS students.

A. Strategic Plan and Goals

The CSUS Strategic Plan is a theme-based planning document with eight themes that serves as a framework to guide decision making at the institutional level, including the allocation of resources. The themes are not based on the University's organizational structure but address issues that have significance across organizational units. The eight themes are intended to be durable and are not expected to change over the short-term. The eight themes consist of 1) Teaching and Learning, 2) Academic Programs, 3) Scholarly and Creative Achievement, 4) Pluralism, 5) Enrolment Management, 6) Campus Life, 7) Community Engagement and Impact, and 8) Institutional Effectiveness.

Figure 2: Association between Strategic Theme Goals and Key Performance Indicators



For each theme, a set of goals, which relate directly to the ***key performance indicators (KPIs),*** are defined to describe the scope of concerns and expectations. From Figure 2, a KPI is a set of 6-12 indicators that directly relate to a set of goals describing the theme as a whole, rather than to the more specific, short-term objectives. These KPIs provide a summary gauge of how the University is doing and can serve as "red flags" if there are any problem areas. Data for the indicators are updated every year and are presented along with standards for purposes of comparison and evaluation. In some instances, external standards for each KPI may be available from a standardized or system-wide survey. Internal standards are used to compare the current value of the KPI to the previous measurement period as a means of documenting trends and tracking progress.

When internal and/or external changes occur, the theme-working group may recommend a theme revision after approval from the Council. A comprehensive theme assessment will take place in response to a significant revision, or if circumstances warrant it, will necessitate a thorough review of a particular theme area. A more detailed explanation with regard to theme working groups will appear in the following section.

An annual progress report is prepared by the Office of Institutional Research (OIR) for each Strategic Plan theme. These reports include updated key performance indicator information, relevant assessment data from surveys, external data, institutional data, summary information on actions underway to address the short-term objectives, and any new issues that OIR staff believes should be brought to the Council's attention, based on its review of the assessment data.

For the second half of the Spring semester, and the entire Fall semester, the working groups of the Council review these progress reports and present recommendations to the full Council. Based on the evidence in the progress report, the Council may recommend adding or deleting specific objectives within the theme, or it may recommend further action or further study.

Once approved by the full Council, the following year's ***Action Plan*** is developed to describe the working group's recommendations, which are then submitted to the President for approval. The Action Plan includes planning objectives, referrals, in depth studies, data issues, and recommendations regarding revision of Strategic Plan themes.

B. Assessment

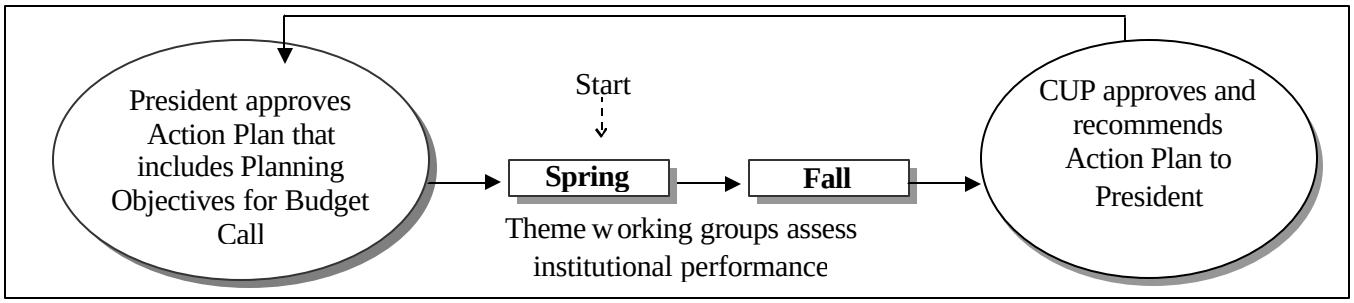
Assessment at CSUS takes place on two parallel tracks. The assessment process carried out by the Council is called "institutional assessment" to distinguish it from program review. The other type is referred to as "program assessment", which takes place at the department level. The Council never evaluates individual programs--academic or support--but instead, evaluates the University's overall progress in meeting its goals. It is noted that program assessment will not be covered in this study.

Institutional assessment occurs only in the context of the Strategic Plan. This distinguishes our approach from those of many other universities. For example, many universities administer the same kinds of surveys that we do (e.g., a survey of continuing students, a survey of staff) and then issue a report on the survey results. At CSUS, we issue reports, not on individual surveys, but on individual Strategic Plan goals and objectives. These reports are a compilation of data from *all* surveys, as well as other institutional data sources that pertain to the theme or priority at hand. We call this "context-based" assessment because it ensures that there is always a "so what" question that is being addressed by the assessment data which prevents the audience from becoming inundated with data just for data's sake.

A set of standardized surveys forms the basis of the "culture of evidence" that we use in institutional assessment. These surveys gather information from entering students, continuing students, graduating students, alumni, faculty, and staff. Each survey allows the University to add a set of local questions that can be used to probe issues of current interest to campus planning and the assessment effort. In addition, at the beginning of each semester students must answer two local questions when they register for classes. This provides another very flexible method for focusing on emerging issues. There are other periodic surveys administered by the California State University system on topics such as student services and technology. By using both standardized and system-wide surveys, we are able to obtain standards (the average of other CSU campuses) against which we are able to gauge our performance.

In addition to survey data, our assessment reports include external data (e.g., demographics) and institutional data on enrolment, ethnicity, retention and graduation rates, facility utilization, and a variety of other topics that pertain to the questions at hand.

Figure 3: Institutional Assessment Process



As illustrated in Figure 3, the Council's agendas for the second half of the Spring semester, and the entire Fall semester, are devoted principally to assessment. ***Working groups***, consisting of about four Council members each, are assigned to take the lead responsibility for each theme. Group members meet with Institutional Research staff to review assessment data and then present their findings and recommendations to the full Council. Recommendations can include improvements to the data collection effort, changes to the Strategic Plan, modification of short-term objectives, issues that should be referred to other committees or administrative units, or special studies that should be conducted. The recommendations regarding the objectives are important in driving the annual budget process (see below for details).

In addition to reviewing assessment reports on the Strategic Plan's themes, goals, and objectives, the Council also monitors KPIs for each theme. The KPIs are intended to be durable indicators of the University's performance for the overall strategic theme. They tend to be general measures that are used to identify any "red flag" areas, where further probing might be warranted.

Based on the evidence from its yearlong review of assessment materials, the Council recommends a set of about 4-8 ***objectives*** for each theme, which it then submits to the President for approval. The objectives are intended to be short-term issues on which the Council will focus its attention until it is satisfied that sufficient progress has been made. The identification of objectives allows the Office of Institutional Research to provide more complete assessment data for a subset of issues than it could provide if the entire theme were to be assessed each year. More importantly, the objectives provide the critical linkage between planning and resource allocation. Once approved by the President, the objectives are communicated to all program centres who then indicate how their budget requests relate to the objectives. When the final budget is presented by the Vice Presidents for review by the Council, the recommended allocations of new resources are described in terms of these approved short-term objectives. In this way,

the Vice Presidents are accountable to the Council for honouring the priorities of the University, as reflected in the adopted short-term objectives that have been derived from the culture of evidence.

C. Resource Allocation

The first step in the annual budget process is the recommendation by the Council for the working groups to revise a set of short-term objectives for the following year. These objectives guide decision making in a variety of ways, but one of the most important is that they provide the critical linkage between the Strategic Plan and the annual budget that allows planning to drive resource allocations. The objectives are adopted at the end of the Fall semester, based on the extensive assessment efforts undertaken by the Council over the course of the year.

As described in the Assessment section, each working group that reviews a Strategic Plan theme is asked to consider whether the assessment data raises any new issues that warrant the identification of new objectives or indicate that earlier objectives have been sufficiently accomplished to be removed from the list. The "objectives" document is organized by the theme of the Strategic Plan. In this way, we are assured that available resources will be directed to areas that have been broadly endorsed as University priorities. Once approved by the President at the beginning of the Spring semester, the objectives become part of the annual "***Budget Call***" that goes out to the entire program centre heads.

In January, the Vice Presidents send out a request for submission of materials related to the preparation of the budget for the following academic year to each program centre. The budget call includes the following questions:

- what will the unit do within its base budget the following year to help the University address the approved short-term objectives?
- how will any new resources requested further address the short-term objectives?
- what has been accomplished with the additional resources that were allocated during the previous year?

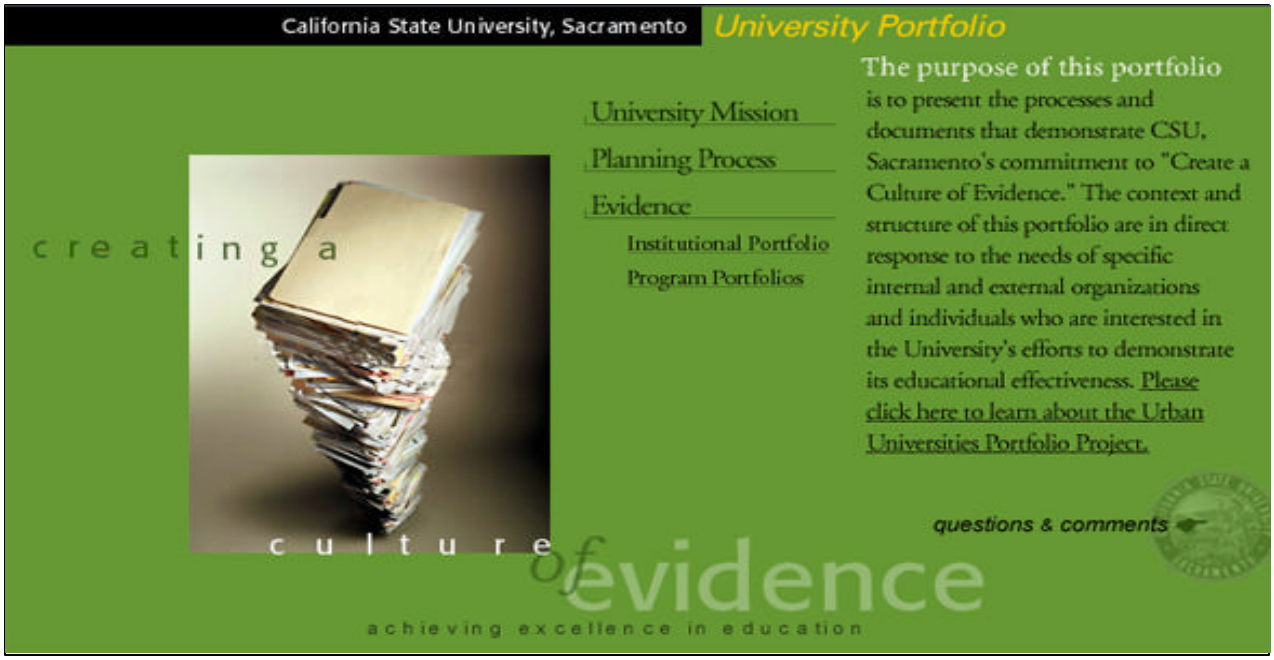
The three vice presidents who serve on the Council (Vice Presidents for Academic Affairs, Administration, and Student Affairs) review all submitted budget requests, along with staff revenue projections, and develop a set of allocations. Once informed of the allocation of its resources, each program centre prepares an explanation of how these funds will be used in relation to the University's objectives. Council staff prepares the final "***New Resources Expenditure Plan***" and presents it to the Council. In this way, the administrators who prepare the budget are accountable to the Council for how the newly proposed budget will address the objectives that the Council established through its integrated planning and assessment activities.

In the following year, the council staff will prepare the "**Accomplishments from Prior Year Allocations Report"** which pulls together the program centre responses to the third question in the budget call (mentioned in the previous section). It follows the same format as the previous year's New Resource Expenditure Plan (mentioned above) so that the accomplishments can be compared to the planned use of the funds. Program centres are urged to describe accomplishments in terms of outcomes, rather than expenditures, to the extent possible. In this way, the Council can monitor the degree to which budget allocations are helping the University accomplish its objectives.

ELECTRONIC INSTITUTIONAL (EI) PORTFOLIO

Similar to individual student and faculty portfolios, institutional portfolios feature authentic work and evidence in a context of learning, reflection, and assessment at the level of the whole institution. This process has opened up new frontiers in institutional assessment, public accountability, and multi-institutional collaboration (Ewell, 2002).

Figure 4: CSUS Electronic Portfolio *(www.csus.edu/portfolio)*



EI portfolio is the most recent development of the portfolio concept in higher education. The CSUS EI portfolio is an internet-based institutional-level portfolio. It is designed to provide data and planning resources that campus leaders can draw upon to make strategic decisions based on evidence and to provide ongoing opportunities for the campus to describe the integrated planning process. Internet technology and its related tools offer an obvious platform, which is more widely accessible than are paper reports, to inform a diverse array of audiences and local stakeholders.

A. Reasons to undertake Electronic Institutional Portfolios

An important requirement for a successful EI portfolio project is sufficient organizational capacity for planning, evaluation, and improving programs. It is designed to monitor the outcomes of teachings and learning, scholarly and creative achievement, and academic programs, as well as for weaving this information together into one coherent model. To serve this purpose, CSUS has undertaken EI portfolio for two main reasons: to exhibit institutional distinctiveness and to stimulate institutional quality assessment.

1. Exhibiting Institutional Distinctiveness

Institutions of higher learning in the U.S. are becoming increasingly diverse. An urban public university, such as CSUS, has distinctive urban missions and accomplishments. Student learning and its implications are a major focus. Our students are becoming more diverse as well, as older, working, minority, and first-generation students are entering the California State University system. With these distinctive institutional characteristics, generic standards of quality based on the traditional paradigm of higher education institutions and students are no longer appropriate. Because EI portfolio has no standard structure, CSUS was able to tailor the portfolio to fit its unique purposes and circumstances. As such, CSUS has used EI portfolio to document the institution's efforts to engage students in learning and to present evidence for the effectiveness of these efforts.

In 2001, the Western Association of Schools and Colleges (WASC) completely replaced its traditional self-study document with internet-based displays as the principal mode of institutional presentation (WASC 2001). The CSUS IE portfolio can easily accommodate the wide range of policy documents that accrediting teams need to examine for "due diligence" purposes, such as baccalaureate learning goals, general education requirements, academic policies, and catalogue materials. It also enables an external body to observe evidence over time. For example, Educational Effectiveness Review, by WASC, encourages institutions to undertake two or three in-depth studies concerning problems areas relating to institutional (or student) learning. The EI portfolio allows for a review of how an institution is able to define a problem, design and carry out investigations of that problem, discuss the implications of what is found, and make changes as a result.

More importantly, since institutional materials can be examined from remote locations, visiting team members can focus on more substantive issues during their actual campus visit. Thus, not only is this approach more effective than preparing traditional narrative descriptions, it is also more efficient.

2. Stimulating Internal Quality Assessment

While EI portfolios provide great benefits to portray missions, demonstrate effectiveness, and exhibit the institutional distinctiveness to external publics, their potential as vehicles for internal improvement may be even greater. CSUS EI portfolio's ability to demonstrate internal effectiveness is a result of the following primary benefits, a) EI portfolio utilizes new technology as a vehicle to demonstrate the planning process, b) it provides statistical analysis as a measures to achieve the institution's mission, c) it shows how the institution uses management information as evidence of the quality assessment process, and d) the ability to utilize the portfolio as a collaborative learning initiative.

First, utilizing internet technology, a portfolio can be developed to publicly present the integral components of an institution's efforts; bringing together strategic planning, assessment, and resource allocation. Second, information can be used effectively in the EI portfolio to provide the viewers with sufficient knowledge about the conditions under which the institution operates. Knowledge of this context is important for judging not only the effectiveness of the institution but also the appropriateness of its mission.

Third, while various measures are used to focus attention on the institution's short-term objectives and key performance indicators (KPIs), administration, faculty members, and staff typically use other types of management information to monitor the success of specific academic programs and activities that, in turn, are aimed at furthering progress toward objectives and KPIs. Finally, EI portfolio development helps build institutional identity and community, strengthen connections among various campus constituencies and initiatives, and develop and reinforce shared visions and commitment. It serves to bring together key people and groups on campus to think collaboratively about the University mission, strategic themes,

goals, and to consider how particular activities, programs, and initiatives complement one another and advance the mission – or fail to do so.

B. Implementation and Related Issues

The process of developing CSUS EI portfolio generates specific demands on the institution. It requires substantial technological expertise and resources. However, the technological aspects of the development process are not the main consideration in determining the institution's preparedness or capacity for pursuing this project.

To capture information and evidence from across the entire institution, and to assess and improve effectiveness institution-wide through EI portfolio, the development team, including faculty, staff, and administration must realize that our own institutional capacities need further development. Gilbert (1995) argues that widespread and effective integration of technology into higher education requires a strong institutional commitment in the form of both leadership and resources, as well as the commitment of many individual faculty members to the particular approach that is proposed.

The most pressing issues were those of aligning technology resources with analytical, evaluative, academic, and design capacities in ways that most colleges and universities have never done before. Finding the appropriate resources is critical to the success of the project, such as searching for the right people to be involved in the process and lead it, and to ensure that the portfolio is integrated with other, ongoing initiatives on student learning, assessment, and effectiveness. The five key elements that we have come to recognize as being important while developing a portfolio initiative at CSUS are:

1. decide early on the purpose of the portfolio, its intended audiences, and the uses these audiences will make of the portfolio,
2. make the portfolio development process inclusive of faculty, administration, and key campus communities to provide real impact and improvement,
3. be selective about the theme of the portfolio, materials, and evidence to be included. Information presented should link to quality assessment, performance measures, and key performance indicators and be regularly updated to reflect ongoing development,
4. be sure that the organization of the portfolio is as simple and user-friendly as possible, and
5. prepare to cover the cost of construction and maintenance.

INSIGHTS AND LESSONS LEARNED

The strategic planning process at CSUS is integrated into the fabric of the University. Quality assessment is the responsibility of every unit at the university level. It is not an isolated activity. The planning process is driven by initiatives that directly affect operations. It influences the operational decisions through planning, assessment, and resource allocation in all university endeavours.

Developing one of the first generation of EI portfolios was a tremendous challenge. The CSUS EI portfolio proves to be a powerful vehicle for fostering internal and external understanding of an institution's mission and work and for bringing together assessment, improvement, and accountability. It has contributed to local knowledge and to collective knowledge, with regarding institution reflection and planning, to external stakeholders.

Involvement in the integrated planning process and development of the EI portfolio provides an opportunity for institutional research to transform itself, and progress beyond the limits of providing decision-making support for management and planning; by moving toward the scholarship of mission-critical activities in teaching and student learning. EI portfolio provides an opportunity for limitless depth

and breadth of exploration, presentation, and assessment of work by administration, faculty, staff, and students. We invite everyone to visit the CSUS EI portfolio and learn more about our integrated strategic planning process at ***www.csus.edu/portfolio***.

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COMPARATIVE STUDY OF EDUCATIONAL PARTICIPATION RATES

John Chan
and
Raj Sharma

INTRODUCTION

Comparative Institutional Research in terms of the Asia Pacific Region is of importance to multi national organisations such as SEAAIR. Such research can promote discussion and further understanding between tertiary education researchers within the region.

This study focuses on comparisons of educational participation rates and related variables with the hope of promoting better understanding of why such participation rates vary across countries in the region. The key issues are:

? How do participation rates vary in developed and developing countries?

? How do they vary across different educational levels?

? Is there interrelationship between participation rates at different levels of education?

? What are the key determinants of participation rates, particularly in tertiary education?

? Comparisons in educational participation rates will be made between the South East Asian nations and OECD.

The above and related issues will be considered in this paper.

METHODOLOGY

As noted by Lenahan, Burke and Ma (1998), most international comparative studies draw on OECD data. Therefore, it is with this study, which particularly relies on the OECD educational database. However, OECD related data have some limitations. First, its principal focus is on European and North American economies. Often OECD publications only include Japan, South Korea and Australia from within the Asia Pacific Region. Further, often there is a significant time lag between the collection and publication of data in the public medium, meaning that the figures can be somewhat dated.

The OECD data has been supplemented by other secondary sources. These secondary sources are drawn from international agencies such as UNESCO and the like.

The Education Indicators appended to the OECD's Education at a Glance was also used as a reference in developing this paper.

LITERATURE REVIEW

As noted by Lenahan, Burke and Ma (1998) participation rates aptly serve as educational indicators but are subject to population measures. For instance, a 1.7% change in China's population is equivalent to the whole Malaysian population (approximately 22 million). Similarly population growth rates are important and while they have been slowing, there are still significant differences across the region. Following temporal changes in population in of South East Asia, it is found that some countries are still growing at over 2% rates (Vietnam – 2.5%, Malaysia – 2.2%, Philippines – 2.1% in 1995) whilst other countries are below 1% (South Korea – 0.9%, Taiwan – 0.8% and Japan – 0.2%). Similarly, the age distribution of the population tends to vary quite significantly across the region. For instance, the younger age group that normally participates in education (5 - 29 age group) ranges from over 50% in some countries (Vietnam – 53%, Philippines – 52%, Indonesia – 52% and Malaysia – 51%) to those that are below 40% (Singapore – 38%, Australia – 38% and Japan – 34%). The 14th Conference of Commonwealth Education Ministries (Commonwealth Secretariat, 2000) notes that the educational development agenda varies significantly across countries. This report suggests that some countries have achieved nearly universal access to basic education and are now preoccupied with opening up tertiary levels of education to a majority of learners, in addition to making provision for life long learning. The Commonwealth Report notes at the lower end of the spectrum that some countries are still struggling to maintain what is an unacceptably low enrolment rate in basic education.

UNESCO (1998) notes that the second half of the 20th century will go down in the history of higher education in that there has been a spectacularly large increase in student enrolments worldwide from 13 million in 1960 to 82 million in 1995. But it should be noted that over the same period the gap between industrially developed, the developing countries and in particular the least developed countries' access and resources for higher education research has become wider and higher than before (when it was enormous). The UNESCO documents suggests that sharing knowledge, international cooperation and the use of new technologies can offer new opportunities to reduce this gap in terms of participation rates in higher education.

Viser (1995) identifies the important role played by distance education in the massification of basic education, particularly in developing countries. For instance, it notes that India's national open school uses distance education to offer students free choice from among a wide range of academic, vocational and life long courses at less than 25% of the cost per student than the formal system.

COMPARATIVE ANALYSIS OF EDUCATIONAL PARTICIPATION RATES

Educational Participation Rates can be defined in various ways. A popular definition of Participation Rates is the proportion of a particular age group who is enrolled in various educational programs. Table 1 compares the mean participation rates for age groups from 15 to 20 years by level of education for OECD and South East Asian countries. The information is based on OECD Education Database using 1998 Educational Enrolments. The following broad conclusions can be drawn from these data:

A) The OECD countries had a mean participation rate of secondary education at 15 years of 93% whilst the South East Asian countries included in these statistics experienced a participation rate of 61% with the differences in mean values being highly significant ($t = 5.0$, p is less than 0.01).

B) Similarly the secondary education participation rate for 16 year olds in OECD countries (88%) was greater than the developing nations of South East Asia (56.1%) – again the difference being highly significant ($t = 4.7$, p is less than 0.01).

C) The differences in secondary school participation rate at the age of 17 was even greater between developed and developing countries with the OECD mean being 78% whilst the developing South East Asian countries had a secondary education participation rate of 31% and the difference was highly significant ($t = 5.97$, p is less than 0.01).

D) Interestingly the participation rate in post secondary non-tertiary education by 17 year olds in the developing South East Asian countries (3.9%) was greater than the corresponding figure for OECD countries (1%) but the difference was not statistically significant ($t = 1.7$, p is greater than 0.05).

E) The secondary school participation rate for 18 age group for OECD countries (48%) was significantly greater than that for the developing South East Asian Countries (19.5%, $t = 2.45$, p is less than 0.01).

F) Interestingly the tertiary education participation rates for 18 year olds from developing South East Asian countries (25.7%) was greater than that for OECD countries (16%) but the difference was not statistically significant ($t = 1.37$, p is greater than 0.05).

G) The secondary school participation rate at age 19 for the OECD states was 23% in comparison to 6.1% for the developing South East Asian nations and this difference was statistically significant ($t = 2.2$, p is less than 0.05).

H) The tertiary education participation rate at age 19 for the OECD countries was 25% and this figure was not statistically different from that of the South East Asian Developing countries (21.2%, $t = 0.56$, p is greater than 0.05).

I) The secondary school participation rate at age 20 for the OECD countries was 12% and this figure was significantly greater than that for the South East Asian developing countries (1.8%, $t = 2.34$, p is less than 0.05).

J) The tertiary education participation rate at age 20 for the OECD countries (28%) was significantly greater than that for the developing South East Asian nations (18%, $t = 1.89$, p is less than 0.05).

TABLE 1

Age Specific Participation Rates Based On Head Count Enrolments

In 1998 for the 15 To 20 Age Group

AGE GROUP/EDUCATIONAL LEVEL	PARTICIPATION RATE (%)		
	Mean OECD	**Mean South East Asian Countries**	**T Value**
At age 15			
–Secondary Education	93	61	5.03
At age 16			
–Secondary Education	88	56.1	4.74
At age 17			
Secondary Education	78	31	5.97
Post Secondary Education – Non Tertiary	1	3.9	1.69
Tertiary Education	1	18.4	3.17
At age 18			
– Secondary Education	48	19.5	2.45
– Tertiary Education	16	25.7	1.37
At age 19			
– Secondary Education	23	6.1	2.22
– Tertiary Education	25	21.2	0.56
At age 20			
– Secondary Education	12	1.8	2.34
– Tertiary Education	28	18	1.89

Source: OECD Education Database

Note: South East Asian Countries included China, Indonesia, Malaysia, Philippines and Thailand (The OECD Education Database did not cover all South East Asian countries).

In the study by Filmer and Pritchett (1998), of School Education in South Asia, Latin America and Africa, it was found that the median grade attainment difference between the poor and rich household was very high in South Asia (10 years in India, 9 in Pakistan), High in Latin America and Western/Central Africa (4 to 6 years) and low in Eastern/Southern Africa (1 to 3 years). Could it be therefore that the higher the gross domestic product per capita (adjusted for purchasing power) the greater the tertiary education participation rates. Accordingly, correlation analysis was undertaken on per capita GDP and tertiary education participation rate at the age of 20 (we feel that lower age group participation rates can be obscured by the variation in length of secondary education in various countries). The study found that there was indeed a positive correlation between per capita GDP and tertiary education participation rates

at age 20 on the basis of the 1998 OECD Education Database. However, Pearson's correlation coefficient was only 0.26 suggesting that the per capita GDP would only explain around 7% of the observed variation in tertiary education participation rates. Nevertheless, the positive nature of the correlation suggests that, all other things being equal, the higher the per capita GDP the greater the tertiary education participation rates. For instance, Australia with a per capita GDP of $19,632 had a tertiary education participation rate at age 20 of 32% where as Thailand with nearly 40% of the per capita GDP in comparison to Australia had an education participation rate at age 20 of only 12%. However, the relatively low positive correlation coefficient between these two variables suggests that other variables need to be investigated. Correlation analysis on two other variables regarding the participation rate of tertiary education at age 20 yielded the following results:

A) The tertiary education participation rates at age 20 were correlated against the secondary education participation rate at age 15. Pearson's correlation coefficient between these two variables was a relatively high figure (R = 0.48), thus explaining nearly 23% of the variance between tertiary education participation rates. This suggest that in order to improve tertiary education participation rates, countries will need to firstly focus on improving the retention of students at higher secondary school levels.

B) Gormley et al. (undated) indicate that the economic measures such as GDP do not constitute a good indicator for the development of a country. They suggest the use of the human development index as a more comprehensive measure since it is composed of life expectancy (health), literacy levels (education) and average purchasing power (income) as a more effective composite measure of a country's development standing. The tertiary education participation rates at age 20 was correlated against the human development index and a relatively high positive correlation was noted (R = 0.43). It suggests the higher the human development index, the greater the tertiary education participation rate at age 20. However, it is noted that the HDI index explains only 18.5% of the variance in tertiary education participation rates – not as good an indicator as the age 15 secondary education participation rate.

Yet another measure of education participation rates is the school expectancy measured by the number of years of education on the average in these countries.

Table 2 below compares the school expectancy mean rates measures on different levels of education and by gender for all levels of education combined in respect of 1998. Statistical analysis of the data contained in Table 2 provides the following conclusions:

a) The mean participation rates for all levels of education and irrespective of gender in terms of OECD countries was 16.4 years where as the corresponding figure for South East Asian countries was only 11 years; the difference in participation rates was highly significant (T = 5.85, p is less than 0.001).

b) The mean participation rate for men in OECD countries (16.1 years) was significantly greater than that for the South East Asian countries (11.2 years), (T = 6.62, p is less than 0.001).

c) Similarly the participation rates of women at all levels of education in the OECD countries (16.5 years) was significantly greater than that for the South East Asian countries (11.4 years), (T = 4.79, p is less than 0.001).

d) The mean participation rates for primary and lower secondary education for the OECD countries (9.3 years) was greater than that for the South East Asian countries (8.6 years) but was not statistically significant (T = 1.51, p is greater than 0.05).

e) The mean participation rates for upper secondary education in the OECD countries (3.5 years) was significantly greater than that for South East Asian countries (1.5 years), (T = 4.19, p is less than 0.001).

f) The mean participation rates for post secondary non-tertiary education in OECD countries (0.3 years) was significantly greater than that for South East Asian countries (0.1 years), (T = 1.91, p is less than 0.05).

g) The mean participation rates for tertiary education in OECD countries (2.3 years) was significantly greater than that for the South East Asian countries (0.9 years), (T = 4.29, p is less than 0.001).

h) It is noted that the preceding participation rates combined full time and part time education. However, the full time participation rates for all levels of education of the OECD countries (15.4 years) was significantly greater than that for the South East Asian countries (8.7 years), (T = 5.42, p is less than 0.001).

i) However, the mean participation rates for part time education at all levels in OECD countries (1 year) was significantly below that of the South East Asian countries (2.8 years), (T = 1.86, p is less than 0.05).

TABLE 2

Participation Rates 1998 Measured in Terms of School Expectancy (In Years)

TYPE OF EDUCATION	PARTICIPATION RATES		
	OECD	SOUTH EAST ASIA	T VALUE
All Levels of Education (persons)	16.5	11	5.85
All Levels of Education (men)	16.1	11.2	6.62
All Levels of Education (women)	16.5	11.4	4.79
Primary and Lower Secondary Education	9.3	8.6	1.51
Upper Secondary	3.5	1.5	4.19
Post Secondary Non-Tertiary Education	0.3	0.1	1.91
Tertiary Education	2.3	0.9	4.29
All Levels of Education Full Time Only	15.4	8.7	5.42
All Levels of Education Part Time Only	1	2.8	-1.86

Source: OECD Education Database

Sometimes educational researchers present educational participation rate data by age group. For example, Table 3 below compares the proportion of age groups participating in education within OECD and South East Asian developing countries. It is noted that the differences in mean participation rates for all age groups are statistically significant. This means that irrespective of whether one is considering the infant students (those at or below 4 years of age) or the thirty plus group, the OECD countries experience a

greater participation rate than South East Asian developing countries. Further, the T values in Table 3 suggest that the differences in mean participation between OECD and South East Asian countries tend to reach a maximum for the 20 – 29 age group.

TABLE 3

Participation rates, (%) by Age Group for 1998

AGE GROUP	***PARTICIPATION RATE***		
	OECD (%)	**South East Asia (%)**	**T Value**
4 years or less	39.6	13.4	2.49
5 – 14 years	97.2	84.8	4.09
15 – 19 years	76.3	49.8	4.07
20 – 29 years	20.4	3.5	6.10
30 – 39 years	4.4	0.16	2.64

Source: OECD Education Database

CONCLUSION

The age specific participation rates by educational level reveals that the OECD countries enjoyed a higher participation rate than the South East Asian countries included in this study. Intuitively the superiority in educational participation rates in OECD countries make sense due to their socio economic development. The observed differences in participation rates appear to emerge at a very early age, for instance, at the age of fifteen where OECD countries enjoy nearly 53% higher participation rate than South East Asian countries.

Correlation studies identify how the current differences between relatively high participation rates in OECD countries and the developing nations of South East Asia may be overcome in the future. This study established a higher positive correlation between per capita GDP and tertiary education participation rates. Therefore, improvements in economic conditions within developing countries will assist in improving participation rates for tertiary education. An even greater positive correlation was noted between tertiary education participation rates at the age of 20 with secondary education participation rates at the age of 15. This finding indicates that the relatively low tertiary education participation rates in South East Asian countries will not be ameliorated until the governments of these countries provide better access to secondary education for the younger population.

Given the obvious links between socio-economic development and tertiary education attainment, it seems to us that governments in developing countries and others who provide aid to such countries need to develop specific strategies to improve both secondary and tertiary educational participation rates in the

developing countries such as South East Asian. Once impact of government assistance on participation rates at post secondary and tertiary educational the levels must not been under-estimated. While the financial ability of student's family would seem to have an impact on educational participation rates, particularly those in South East Asia, government funding in terms of assistance to students (such as student loan scheme, living allowance etc.) would obviate some of the prevailing socio economic factors facing the population.

A significantly higher part time educational participation rates in South East Asia in comparison to OECD countries is an important finding. Whilst not supporting child labour at young ages, it is highly probable that in developing countries young adults and children greater than 15 years of age would be required in developing countries to contribute to household incomes. The pragmatic solution to this problem is to encourage greater part time educational participation in developing countries. Distance education may also be an important consideration since it would allow students to undertake part time study in remote locations. Further, past studies have indicated that distance education is "cheaper by the dozen" and hence it may be more economical with the requirements to educate a large number of the populations in developing countries. It would be helpful if the developed countries were able to share their on-line and related course work more freely with developing nations so as to minimise the cost of development of course materials for governments in developing countries who are cash strapped and cannot fund the expensive fixed costs associated with distance education.

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GENERIC SKILLS ASSESSMENT FROM EMPLOYERS' PERSPECTIVE: A COMPARATIVE ANALYSIS OF A CHINESE UNIVERSITY

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INTRODUCTION

The economic reforms of China, which started since 1978, are well known throughout the world for the double-digit growth in China's GNP for the greater part of the last quarter century. Less well known are the educational reforms that had occurred for the past 15 years, particularly the last five years, which had implemented with rapid intensity in the higher education sector. While the main goal of China's Ninth Five-Year Development Plan had spelt out the vision of taking China to be a member of the industrialised developed world in two decades time by developing within the national political ideology of the Three Represents, the actual trigger for the urgent reform and change in higher education is attributed to two principal factors:

? The continuing inflow of foreign investment and rapid growth of domestic investment in the manufacturing and service industries (ranging from low to high technology), especially in the urban centres of the eastern seaboard of China, have created an urgent and high demand for a skilled workforce that can manufacture products which meet the international standards required of export products through an internationally certified quality assurance system such as the ISO 9000 series.

? The growing middle class and increasing disposable income of the domestic consumers are demanding better quality products as well as establishing a consumer preference and market for electronic and other high-tech household gadgets.

The above factors set in train the steamrolling of old industrial practices based on the "iron rice bowl (*tie fun wan*), simply meaning "employment for life", into new employment pathways of work contracts and enterprise bargaining, similar to that of Australia's and other Western countries. Entry into employment is now more based on generic skills and academic requirements of the various respective industries rather than political ties or social relationships (*guanxi*). Therefore, it has caused massive layoff of the mainly unskilled labour and jobs that have become irrelevant, especially those that can be replaced more efficiently by automation. Contradictory to this new massive unemployment is the grave shortage of skilled workers that are in urgent need to propel the productive forces of the "new" Knowledge Economy that is taking place in China. Even in the manufacturing industries (shoes, optical glasses, garments and others), which were traditionally classified as labour intensive and low-tech, have now introduced new methods of processing based on computerised automated technology and modern management methods in order to compete in the export-oriented global market. Inevitably, these industrial transformations require workers who possess the knowledge and generic skills that are compatible with the reformulations of the production system and the Knowledge Economy. Graduates that do not meet the employer criteria of employability will seldom be recruited or retained as employees. Hence, the Chinese HEI, normally recognised by the public as the training ground for providing the skilled workforce of the nation need to

develop educational programs which emphasise generic skills that offer learners a comparative advantage in the labour market.

Much of China's higher education reforms are focused on the advancement of science and technology, followed by commerce in curricular reforms. The reforms have also broadly identified the kinds of graduate qualities, which the HEI should aim for, aside from teaching quality and institutional efficiency. These graduate qualities include professionalism (competence in one's disciplinary area and professional ethics), capacity to transmit knowledge (including training), cultural skills (able to interact and work effectively across cultures), moral and ideological quality, and physical and psychological quality. To a large degree, these generic skills can be considered as an extension of the aged old Confucian education that had been in place over 2000 years ago, namely, that its pedagogical aim is to transmit and develop knowledge, as well as to deliver and apply universal values such as fostering a spirit of self-discipline, family solidarity, public morality and social responsibility.

Education, like almost all sectors of the Chinese economy, is a centrally planned system in which the HEI have to comply with the public policies as promulgated through fiat. Students and academic staff inputs at the institutional level on a system-wide basis on the kinds of graduate qualities or generic skills formation are at best limited. As graduates in China are now free to find employment on their own and more exposed to the "market economy with Chinese characteristics", it is important that they are able to identify the kinds of generic skills, which are important to them and whether such skills have been accomplished in their institution of study. Thus, the aim of this paper is to examine employers' perception of generic skills in terms of their importance and accomplishment in their course program. A comparison is then made between the three key university stakeholders' (Students, Staff and Employers) perception of the importance and accomplishment of the selected generic skills in the academic program; the student and academic staff data are based on a survey undertaken at the same university and reported by Ng, Sharma and Yan (2002).

The case study institution, Wenzhou University, is located in Wenzhou, a city on the southeast coast of China. The University has a student load of approximately 6000 equivalent full time students covering a number of disciplines including Humanities and Social Sciences, Art and Design, Business, Engineering, Sciences, Economics, International Relation, Information Technology and Architecture. Wenzhou University was established in 1984 by the municipal government, and its development pattern has been strongly influenced by the business environment and entrepreneurial spirit of the city of Wenzhou. Often known as the "factory of China", Wenzhou has five major manufacturing industries focusing on footwear, garments, optical glasses, lighters and electrical devices. It is to be expected that employers of these industries would assume university graduates to possess those broadly transferable skills termed "generic skills" to help them move quickly into their respective jobs with minimal or ideally without training provided by their employers. How well this expectation is met would be revealed to some extent from the survey of Wenzhou employers' perception of generic skills formation of graduates from the case study institution.

METHODOLOGY

As an extension of the previous study mentioned earlier, the School of Management, Wenzhou University in the province of Zhejiang was again selected as the case study to examine employer perception of generic skills in terms of their importance and accomplishment in their academic program. This would help to complement the earlier study that focused on students and academic staff perceptions of generic skills formation at the university. The institution selected is again based on convenience and accessibility, as two of the paper authors are staff members of the university. The case study is in no way representative of the HEI in China and the results are merely indicative of an HEI under study.

In order to enhance the comparability with the latest survey undertaken of students and staff in 2002, the same basic instrument was again used, with appropriate adaptations. The questionnaires used were similar to those used in a study conducted by Ng, Heskin and Sharma (1994) at an Australian institution. However, minor modifications were made to fit the Chinese setting. A hundred employers from Wenzhou were randomly chosen for the survey, and 72 valid replies were collected giving a response rate of 72%. Employers from different parts of Wenzhou were asked to rank the 33 generic skills categories in their order of perceived importance and accomplishment on a 5-point Likert scale. The sample covers employers from three districts and five counties of Wenzhou, accounting for 8 of the 11 districts and counties in Wenzhou. The sample areas are high in GDP, considered as key areas for economic development, and are major sources of job vacancies for graduates from Wenzhou University. The number of questionnaires assigned to different areas is based on the economic value of each place, expecting that the sample will represent the employers in Wenzhou largely. The objective data was imported to SPSS to generate percentage and cross tabulation results. Employers' comments for the following subjective question were noted down for reference in report writing: "What are your comments and suggestions for the generic skills formation of the students from Wenzhou University?"

LITERATURE REVIEW

Interest in generic skills among the various stakeholders of society, especially in industrialised countries, has a history of about three decades. As such, the term has been defined and named differently in various countries, as the variation depends upon the views and aims of the particular stakeholders. Table 1 illustrates the example of how the term is used to describe generic skills in various countries.

Table 1: Terms used to describe Generic Skills in various countries

Country	*Term*
Australia	Key competencies, employability skills, generic skills
Canada	Employability skills
Denmark	Process independent qualification
France	Transferable skills
Germany	Key qualifications
New Zealand	Essential skills
Singapore	Critical enabling skills
Switzerland	Trans-disciplinary skills
United Kingdom	Core skills, key skills, common skills
United States of America	Basic skills, necessary skills, workplace know-how

Two historical phases can be distinguished in the process of defining generic skills. The earlier phase commencing in the early 1970s focused on sets of skills relevant to work and life generally. The latter phase of the late 1980s was mainly influenced by employer-led initiatives, which, currently had an extended lists of skills closely related to employability. Perspectives and definitions of the two phases are discussed in the next section based on their chronological order.

Perspectives and Definitions of Generic Skills

The first country to show interest in defining generic skills took place in Canada in the early 1970s. As mentioned earlier, the definition was very basic, confining to a set of essential skills related to work and life in general. Other countries (the United Kingdom, United States and Australia) subsequently followed the same pattern. For example, in Australia, the Karmal Committee report of 1985 and the Finn Review of 1991 identified the need for young to develop basic key competencies for education and employment.

Interest in generic skills formation has grown intensely in the past decade is probably influenced by the commercialisation of higher education vis-à-vis the incremental decline in government funding for public universities, particularly in the West. As either full or partial fee-paying clients, students are demanding educational outcomes that should make them competitive in the employment marketplace, while employers demand graduate qualities that enhance their business competitiveness. Similarly, universities need to provide the generic skills formation required in the marketplace in order to attract fee-paying students for their financial survival.

Further, with greater employer recognition of the importance of generic skills in responding to the job requirements of changing technology and changing economic and social circumstances, the government, education and employer sectors began to examine generic skills formation seriously in the context of the nation's capability to compete in a globalised economy. This examination, from various stakeholders' perspective, has created a plethora of definitions and views of generic skills. Some stakeholders are interested in generic skills related to academic success, some to socio-cultural understanding, while others may be more geared towards employability. However, whatever the perspective, there is congruency of stakeholders' view that generic skills should result in employability outcomes. The review below exemplifies some of the stakeholders' perspective and definitions of generic skills.

In the United Kingdom, the NAB/UGC report (1984), for example, stated that valued employability skills include:
"… the ability to analyse complex issues, to identify a core problem and the means of solving it, to synthesise and integrate disparate elements, to clarify values, to make effective use of numerical and other information, to work co-operatively and constructively with others, and above all perhaps, to communicate clearly both orally and in writing."

In terms of employability skills, the Mayer Committee (1992) identified the following essential competencies:

- Collecting, analysing and organising information;
- Communicating ideas and information;
- Planning and organising activities;
- Working with others and in teams;
- Using mathematical ideas and techniques;
- Solving problems;
- Using technology;
- Cultural understanding.

In 1994, Ng, Heskin and Sharma studied the generic skills outcomes of an Australian program, which stakeholders had prioritised based on the Mayer competencies to some extent. They found that all the three stakeholders (students, staff and employers) concurred with the following five generic skills, namely, (1) analyse and solve workplace problems, (2) develop professional skills, (3) ability to work unsupervised, (4) ability to think laterally and (5) think logically and critically, as the main priorities of any program offering. The authors also found that students perceived the importance of writing skills significantly lower in importance than either staff or employers.

A similar study conducted by Harvey and Green in the same year as the Ng, Heskin and Sharma study found that employers and academic staff valued the following generic skills:
"…willingness to learn, team work, problem solving and a range of personal attributes including commitment, energy, self-motivation, self-management, reliability, cooperation, flexibility and adaptability, analytical ability, logical argument and adaptability to summarise."

A year later, the Association of Graduate Recruiters in the United Kingdom (1995) noted that self-reliance skills are particularly important for graduates. These include self-awareness, self-promotion, exploring and creating opportunities, action planning, networking, matching and decision-making, negotiation, political awareness, coping with uncertainty, development focus, transfer skills and self-confidence.

From a course program perspective, a University of Bristol report (1994) prepared by the HEFCE on the Geography discipline stressed the critical role of generic skills formation in the quality assurance process and identified a range of skills, which is both relevant to the discipline and transferable to the world of work. Generic transferable skills are treated as an implicit part of the course but the HEFCE report suggested that they could, with advantage, be treated more explicitly in both teaching and student assessment.

A study of generic skills taken as a snapshot at Griffith University found that oral communication, written communication, problem solving, analysis, Information Technology and critical evaluation were considered to be well embedded (Crebert, 2000). The same project further indicated that ethical standards was well implemented in some discipline areas, but less so in others. However, Crebert (2000) reported that implementation of Teamwork, employability and further study, independent lifelong learning, leadership and decision making and responsibility was generally more inconsistent, and needs to be the focus of staff development initiatives at that University.

Somewhat related to this finding are the ACNielsen (1998, 2000) reports, which found that Australian new graduates who have been employed are perceived to be most deficient (in comparison with employer expectations) in creativity and flair, problem solving skills, oral business communication skills and interpersonal skills, as well as numeracy, academic learning and logical and orderly thinking. Aside from those mentioned, Australian employers also listed the following graduate employability skills as most important: academic achievement, literacy, computer skills, time management skills, teamwork skills and comprehension of business processes.

While addressing the importance of generic skills development to meet the requirements of employers, De la Harpe et al. (2000) suggested that "the focus of the curriculum needs to shift from an emphasis exclusively on subject content to one that also includes a focus on skill development", which called for a curriculum encompassing process, as well as content and goals. Teacher-centred and content-focused approach to teaching and learning is likely to be the obstacles to skill development whereas student-centred and process-focused approach is expected to advance skills. In order to facilitate the transformation that is likely to benefit skill development, the university needs to invest significantly in staff development and monitoring the change process. (De la Harpe et al., 2000).

In 1999, Gutherson et al noted that various researchers tended to use different terms for "generic skills". For example, terms such as transferable skills, key skills, core skills and common skills are used synonymously with generic skills. Much of the debate concerning generic skills was centred on higher education's role in the economy or world of work, with little or no engagement regarding the social role of higher education (Gutherson et al, 1999). In their survey of academic staff, Gutherson et al found that 66 per cent of the respondents felt that their students' communication and personal skills, on entry to university, were not adequate. The study recommended that future research should compare students' and academic staff's perceptions of generic skills formation. This paper focuses on such a comparative study, thus filling a research gap as identified by Gutherson et al.

Generic skills are generally referred as "those skills, abilities and personal attributes that can be used in a wide range of working environments that graduates operate in throughout their lives." (Swinburne

University of Technology, 2002:9) They are "the building blocks for developing the attributes valued in a university graduate" and are hence, deemed "essential for all graduates, irrespective of their course of study. (Swinburne University of Technology, 2002:9). This definition is similar to that of the Australian National Skills Task Force, who defined generic skills as "those transferable skills, essential for employability, which are relevant at different levels for most (people in the workforce)."

Boyce et al (2001) defined generic skills as "the range of general education skills that are not domain- or practice-specific, which include communication and interpersonal skills, problem-solving skills, conceptual/analytical and critical skills, visual, oral and aural skills, and judgement and synthesis skills." In a paper studying the generic skill development of accounting students, Boyce et al (2001) noted that the changing nature of accounting work had necessitated changes in accounting education. The key attributes for contemporary accountants include a range of generic skills such as "analytical and problem-solving skills, judgement and synthesis skills, personal and interpersonal communication skills, management, negotiation and organization skills, and the ability to apply these skills in a range of unique situations"(Boyce et al, 2001). Boyce et al (2001) had also suggested that case studies, together with a range of specific teaching and learning strategies, can provide an effective way for generic skills development of accounting students.

Oliver and McLoughlin (2001) suggested that defining the full range of generic and transferable skills that are useful for university students is an exhaustive process. Nevertheless, they believe that generic skills are those transferable skills that are considered essential life skills for people both in and out of the workforce. Oliver and McLoughlin (2001) indicate that generic skills and competencies can be developed through three main learning activities, including integrated approaches, stand-alone approaches or approaches where generic skills are developed in parallel with the conventional curriculum.

A recent document by the New Zealand Department of Labour and Ministry of Education (2001) noted that its workforce needs a higher level of generic, transferable skills that nurture flexibility in meeting the challenges of the knowledge economy. The document observed that New Zealand's industry training system of the future needs to (1) raise the quantity and quality of skills held by the workforce, (2) respond rapidly to changing skill needs of the economy (3) equip more New Zealanders to successfully participate in the workforce, and (4) become more accessible and responsive to all groups in the workforce, including minorities.

The Australian (3 April 2002) reported on the result of a skills formation survey of Australian University students by the ACER (Australian Council for Educational Research). The study found that employers are of the view that a university education should enhance the abilities, which students already possessed. It also reported that the higher the student tertiary entrance scores, the better the generic skills formation in such areas as critical thinking, problem solving and communication. Further, it reported differences in generic skills formation in different disciplinary programs. For instance, the ACER study found that IT students had lower problem solving score than those studying Medicine, Architecture, Engineering, Science/Maths and Law, but were slightly above those of Arts and Humanities students. Likewise, Business and Commerce students fared worse at problem solving skills than students of other disciplinary programs.

As can be seen, there are different perspectives and definitions of generic skills. In regards to generic work skills, Kearns (2001) has identified two approaches:

Approach 1: broader, more flexible, and more holistic set of generic skills, which include basic skills, personal attributes, values and ethics, learning to learn, as well as workplace competencies of the Mayer type.

Approach 2: more narrowly focused and instrumental set of skills competencies - personal attributes and values have been excluded.

Approach 1 is more commonly used in the United States while Approach 2 is more common in the Australia, New Zealand and the United Kingdom.

However, with higher education increasingly becoming internationalised, there is a growing recognition for the convergence of the varied generic skills terminology. As Kearns (2001) states:

"…it is desirable to find agreement on terminology that is acceptable to all stakeholders – schools, VET, higher education, employers, individuals, and communities and which recognises that the new agenda of generic skills for the 21st century is about essential life skills as well as enterprise and employability skills."

The OECD (Organisation for Economic Co-operation and Development) is acting on this by establishing DeSeCo (Definition and Selection of Competencies), an international project to offer a theoretical and academic approach to defining generic skills and to compare approaches of individual countries which are based on the views of employers and educators. In the case of Australia, the Australian National Training Authority has been commissioned to coordinate a collaborative cross-sectional approach to employability skills as defined by Australian industries. This project is expected to be completed in 2004.

The above highlights of generic skills studies are of relevance to this study, and particularly to the curricular reforms that are taking place in China now. As far as the authors of this paper are concerned, they have not come across such studies in China, except their own study. This is not surprising, as the curriculum is centrally planned and access to curricular planning documents is near impossible. It is hoped that the findings of this study, which will be discussed below, would provide a catalyst for further research in generic skills requirements and formations in China.

EMPLOYERS' PERCEPTIONS OF GENERIC SKILLS

As discussed in earlier sections, employers are leading the present agenda in defining the types of generic skills required for their respective industries. It was shown that employers in different countries tend to vary in their perceptions of the kinds of generic skills that their graduate employees should possess. Nevertheless, process management and employment relations, including those of higher education institutions (HEI) have been affected by the five broad trends, which have emerged from the effects of ICT (Information Communications Technologies) advancement, globalization of the workplace and the culture of organizations. These trends are:

- The emergence of flat and flexible organizations;
- The transformation of the economy into a knowledge-based economy;
- The shortened shelf life of knowledge;
- The new focus on lifetime employability rather than lifetime employment; and
- A fundamental shift in the global education marketplace, particularly in the tertiary education sector.

In the context of the tertiary education sector, these trends pose serious challenges to its traditional providers, such as the publicly funded universities, to respond to the changes in human capital development and global workplace requirements rapidly. To meet these challenges, conventional universities (as part of the knowledge industry) need to change their structure of governance and culture

in a way that they can respond rapidly to the curricular and training needs of the knowledge-based economy, which requires continuous or lifelong learning to develop broader skills. In fact, many American corporations have initiated the establishment of corporate universities that operate on the market-driven model of education, providing 'in-house' training and education facilities for staff so that they can be more competitive in the marketplace. Likewise, governments in many parts of the world responded to this corporate initiative with major reforms at all levels of their educational system.

Mainly driven by the corporate sector, employers have questioned and continue questioning the generic capabilities of graduates from conventional universities in fulfilling the knowledge and skills markets of the Knowledge Economy. Taking the initiative to ensure that corporate America have workers with the appropriate capabilities to perform competitively in the global market place, over 2000 corporate universities were established in recent years in the United States to provide education and training for the following generic skills formation: learning to learn, communication and collaboration, creative thinking and problem solving, technological literacy, global business literacy, leadership development, and career self-management. These generic skills have been recognised as the key global workplace requirements of the Knowledge Economy.

China, like most parts of the world, undertook educational reforms to meet the changing global workplace requirements in the mid-1990s. Reforms were focused upon five major areas, namely, (1) educational provision, including teaching and graduate qualities, (2) sectoral management, (3) investment, (4) recruitment and job placement, and (5) institutional management. While the reforms were implemented on a system-wide basis, covering slightly less than 2000 higher education institutions (HEI) of some 13 million students in 2002, only the first top hundred universities in the country were selected under Project 211 to be primed as world-class universities. Project 211 is a national priority for nurturing the nation's top 100 universities to achieve world-class standards through special resource funding that facilitates these universities to have the capacity to employ world-class staff, conduct world-class research and select the best students for admission to their courses. The case study institution does not belong to the top 100 HEI in China.

This section addresses the perception of employers in Wenzhou concerning the importance and accomplishment of the 33 kinds of generic skills listed in the survey questionnaire. It is in no way comprehensive in sample coverage. Hence, the results and comments made in this section and the rest of the paper are indicative only.

Table 2 contains the employers' mean scores for perceived importance and accomplishment of generic skills as well as the difference between the mean scores.

According to their rank order of importance, employers perceived that the following generic skills were of high importance and should be incorporated in the course of study:

? Capacity to function effectively as part of a team
? Proficiency in analysing and solving problems in the workplace
? Self-confidence
? Self-reliance
? Capacity to be trainable or re-skilled to changing needs of the workforce
? Motivation and enthusiasm for work
? Knowledge to appreciate and maintain professional ethical standards.

Other generic skills were regarded as being of modest importance by the employers with the following two achieving the lowest ranks in terms of importance:

? Understanding and appreciation of Social and Behavioural Sciences
? Understanding and appreciation of Mathematical Sciences.

The above results show that employers are practical people and are more concerned with work-related skills that require employees to function effectively as a team member, analyse and solve workplace problems confidently, be self-reliant, trainable and motivated as well as to maintain professional ethical standards. It is interesting that these 7 most important generic skills as identified by the employers represent the characteristics of the management style of flat, autonomous and flexible organisations, a managerial phenomenon of the Knowledge Economy. This is not surprising because business people in Wenzhou are considered the most entrepreneurial in China and their international business network, especially in Europe, is the most elaborate.

Despite international perception about the absence of professional ethical standards in the business sector of China, Wenzhou employers ranked this matter as the seventh most important out of the 33 generic skills to be selected. Employers have recognised that supervising cost tends to decline if employees maintain high ethical standards. Besides, the municipal government of Wenzhou has been advocating honest conduct in business with the aim to present Wenzhou as the City of Honesty and Credibility, which helps to build a shared vision among local enterprises to emphasize more on ethical standards.

TABLE 2: MEAN IMPORTANCE AND ACCOMPLISHMENT OF GENERIC SKILLS AS PERCEIVED BY EMPLOYERS

GENERIC SKILLS	Mean Importance	Mean Accomplish-ment	Difference between Means	T Statistics
1.Understanding and appreciation of Social & Behavioural Sciences	3.17	2.92	0.25	1.95
2.Understanding and appreciation of mathematical sciences	3.11	3.10	0.01	0.07
3. Ability to write well	3.64	3.21	0.43	2.76
4. Ability to manage time	3.83	3.33	0.5	3.33
5. Ability to plan	3.89	3.36	0.53	3.59
6. Competence to speak well in public	3.64	3.21	0.43	2.58
7. Ability to think laterally	3.85	3.26	0.59	3.85
8. Capacity to think logically and critically	3.65	3.17	0.48	3.37
9. An understanding of themselves and society	3.65	3.11	0.54	3.88
10. Competence to use Library and other information sources	3.63	3.22	0.41	2.60
11. Preparation for further postgraduate study or specialist training	3.57	3.18	0.39	2.74
12. Capacity to be trainable or re-skilled to changing needs of workforce	4.04	3.43	0.61	4.63
13. Knowledge for continued growth and self-development	3.93	3.43	0.5	3.44
14. Understanding of career options and career goals	3.68	3.14	0.54	3.61
15. Proficiency in analysing and solving problems in the workplace	4.32	3.47	0.85	6.52
16.Capacity to attend to detail	3.76	3.22	0.54	3.50
17.Motivation and enthusiasm for work	4.01	3.50	0.51	3.91
18.Initiative	3.9	3.40	0.50	3.73
19.Capacity to work with minimum supervision	3.90	3.36	0.54	3.39
20.Ability to earn a good salary	3.61	3.07	0.54	4.26
21.Ability to generate wealth in Commerce and Industry	3.63	2.97	0.66	4.42

GENERIC SKILLS	Mean Importance	Mean Accomplish-ment	Difference between Means	T Statistics
22. Development of personal and ethical values	3.93	3.46	0.47	3.10
23. Knowledge to appreciate and maintain ethical standards	4.00	3.44	0.56	3.69
24. Awareness of new technology for people	3.47	3.03	0.44	2.76
25. Ability to serve society in useful ways	3.51	3.17	0.34	2.21
26. Self discipline	3.96	3.58	0.38	2.59
27. Self confidence	4.10	3.65	0.45	3.10
28. Self reliance	4.08	3.61	0.47	3.06
29. Ability to listen to people carefully & understand what they are really saying	3.69	3.19	0.50	3.43
30. Sensitivity to other people's problems and difficulties	3.64	3.25	0.39	2.87
31. Ability to elicit accurate information from others	3.86	3.44	0.42	2.91
32. Capacity to function effectively as part of a team	4.35	3.74	0.61	4.42
33. Ability to avoid and resolve inter-personal conflicts and difficulties	3.83	3.25	0.58	4.12

The low rankings given to social and behavioural sciences and mathematical sciences do not detract from the fact that these disciplines form an essential part of the academic curricula in China. In fact, graduates are expected to be well equipped in these two disciplines, as they have been taught with rigour since primary school. However, the social sciences are mainly focused on Marxist ideology and given the current phenomenon of market economy in which "to be rich is glorious", the ideology has almost lost its impact on the hoi-polloi of China. As such, employers have not placed much importance on the social sciences while the graduates are expected to have numeric literacy.

The generic skills that were perceived by the employers to be highly accomplished are listed as follows according to the rank order of accomplishment:

? Capacity to function effectively as part of a team
? Self-confidence
? Self-reliance
? Self discipline
? Development of personal and ethical values
? Knowledge to appreciate and maintain ethical standards
? Ability to elicit accurate information from others.

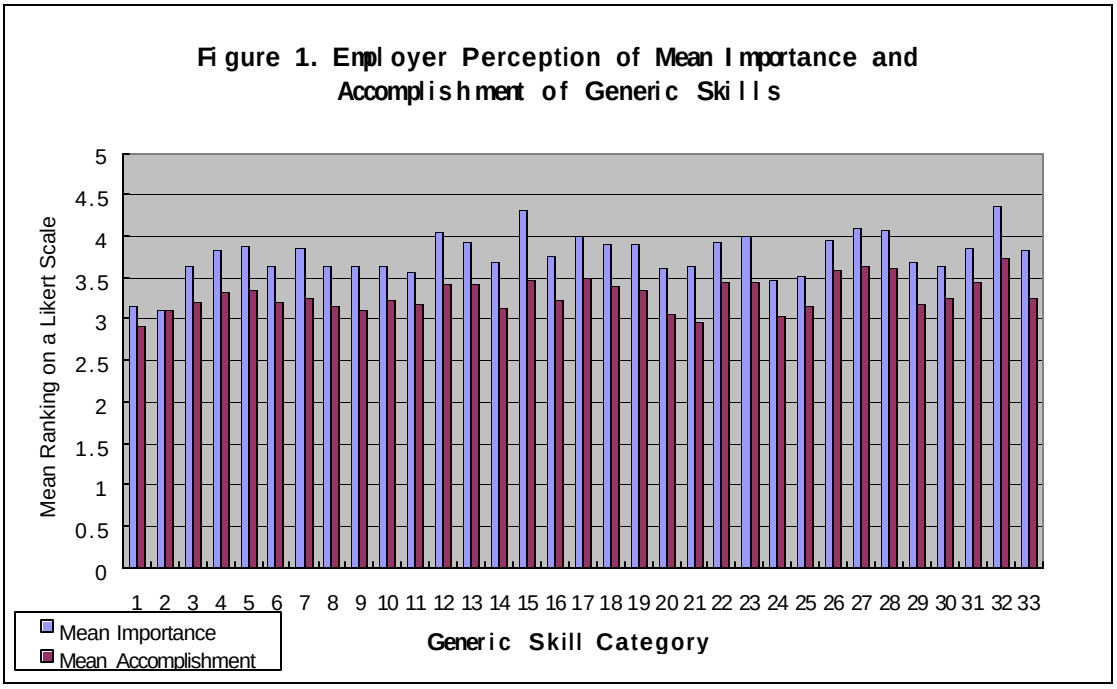
It is important to note that employers placed "Capacity to function effectively as part of a team" in the top rank in terms of importance and accomplishment. The other most accomplished generic skills are essential characteristics (listed above, such as self-confidence, self-reliance, self-discipline and so on) that are required for working effectively as a team. That these generic skills are the most accomplished according to employers' perception testifies the success of the Chinese educational system in bringing together a diverse population noted for their individualism and selfishness to embrace teamwork ethics. Aside from the educational system, the work unit or "danwei" system organised along the concept of working together as a family with lifelong employment assurance ("tie fun wan") and "guanxi" (a network of social relations) could have solidified the practice of teamwork in the various work units and enterprises. However, with the abolition of "tie fun wan" and changes in employment relations, the attributes required to establish a successful work team may be found wanting in later years, as more and more of the employees work under enterprise bargaining and work contracts. A follow study in a few years time may be able to reveal whether employers still affirm teamwork characteristics as the most accomplished of the generic skills.

The generic skills that were perceived by employers to be least accomplished by the graduates (Table 1) are as follows:

? Understanding of Social and Behavioural Sciences
? Ability to generate wealth in commerce and industry
? Awareness of new technology
? Ability to earn good salary
? Understanding and appreciation of social and behavioural sciences
? An understanding of themselves and society
? Understanding of career options and career goals.

It is interesting to observe that employers have noted that the graduates are least accomplished in their awareness of new technology. Although China is in the midst of a technology boom in terms of computer, Internet, mobile phone and other electronic gadget usage, graduates' awareness of new technology may not be as intense as the employers, many of whom have travelled widely in Europe.

Relationships between perceived importance and accomplishment



The differences between importance and accomplishments scores for all 33 generic skills were statistically analysed. Pearson's Correlation Co-efficient was used to test the relationship between perceived importance and perceived accomplishment for each of the 33 pairs of generic skills. It was found that there was a high positive correlation between perceived importance and accomplishment of generic skills ($r = 0.88$). This is an important finding since it indicates that those generic skills regarded as important by the employers are also the ones that are more highly accomplished.

Figure 1 shows the importance and accomplishments as well as reveal their differences. The convergence in employers' perception of importance and accomplishment of generic skills lies in the following attributes:

? Understanding and appreciation of mathematical sciences
? Understanding and appreciation of Social and Behavioural Sciences
? Ability to serve society in useful ways
? Self-discipline
? Sensitivity to other people's problems and difficulties
? Preparation for further postgraduate study or specialist training.

The convergence reveals the achievement of a Chinese socialist education to some extent and in no way solely confined to the case study institution. That the convergence also applies to the generic skill of "Preparation for further postgraduate study or specialist training" shows that graduates are conscious of the need to continuously improve themselves both in skills and knowledge of their profession. In short, they are conscious of the importance of lifelong learning in ensuring their long-term employability. It also reveals the potential market for postgraduate studies and other professional training in China.

Generic skills with the largest differences in their order of degree between the perceived importance and accomplishment (see Figure 1) are listed as follows:

? Proficiency in analysing and solving problems in the workplace.
? Capacity to be trainable.
? Ability to generate wealth.
? Capacity to function effectively in team.
? Ability to earn good salary.
? Ability to avoid and resolve interpersonal conflicts and difficulties.

The divergence in perception of the above generic skills amongst the employers reveals key weaknesses in pedagogy that the case study institution should investigate into in order to improve their graduates' employability in the job market. These weaknesses can be easily rectified by redesigning the curricula of the various disciplines to be more focused on practical training and case studies based on teamwork, which involves conflict resolution and problem solving. On the basis of differences between mean scores as measured by the T Statistics, this suggests that the University's greatest priority should be in the development of the generic skill "proficiency in analysing and solving problems in the work place".

FIRM SIZE

The employers in the Commercial and Business Enterprises were grouped according to size as follows:

? Firms with employees of less than 100.
? Firms with employees numbering 100 to 500.
? Firms with more than 500 employees.

In general, the size of the firm does not appear to make any large difference to the generic skills importance or accomplishment scores, except the following:

? Ability to manage time, where the smallest category of firms had a mean importance score of 3.32 whilst those organisations with more than 500 employees sustained a means score of 4.00 with the difference in mean being statistically significant (t = 1.89, p is less than 0.05). This suggests that larger firms tend to place greater importance on employees to manage time.

? Similarly larger firms place greater emphasis on the ability to plan, whereas the relatively small organisations sustained a mean importance score of 3.55 whilst firms with more than 500 employees sustained the mean score of 4.35 with the differences in the means being highly significant (t = 2.79, p is less than 0.01).

INTER UNIVERSITY COMPARISONS

The importance and accomplishment scores for the generic skills perceptions of employers can be segmented according to whether graduates from the case study university were employed within the organisation. While ticking the box of "Never employed graduates from Wenzhou University", most of the employers did not mention the names of the institutions from which their employees came. But the information provided by those who did mention the institution names showed that other universities cover a wide range of institutions from different part of China. Overall, the accomplishment scores for the case study university were about the same as that of the other universities or in many cases greater than that of other institutions. Indeed, in 29 out of 33 generic skills or approximately 88% of the cases, the accomplishment scores for the case study university were greater than that of other high education institutions. This is a positive result for Wenzhou University.

One of the reasons is that students from Wenzhou University usually have more chance to attend the workplace training programs jointly conducted by the employers and the University. The close relationship between the industry and the University has helped the students to better understand the requirements and culture of their potential employers and thus better prepare them for work after graduation. Local universities have an advantage in producing graduates with skills that are required by employers operating within the region, provided the institutions establish strong links with employers of the various industries and incorporate some of the employers in their course development committees.

STAKEHOLDERS COMPARISON OF GENERIC SKILLS PERCEPTIONS

Table 3 presents the mean importance and accomplishment of Wenzhou University graduates, as perceived by the region's employers, the university's academic staff and students.

TABLE 3: COMPARISON OF MEAN IMPORTANCE AND ACCOMPLISHMENT OF GENERIC SKILLS AS PERCEIVED BY EMPLOYERS, ACADEMIC STAFF AND STUDENTS

GENERIC SKILLS	Mean Importance			Mean Accomplish-ment			Difference between Means		
	employer	Staff	Students	employer	Staff	Students	employer	Staff	Students
1.Understanding and appreciation of Social & Behavioural Sciences	3.17	3.74	3.41	2.92	2.55	2.58	0.25	1.19	0.83
2.Understanding and appreciation of mathematical sciences	3.11	3.48	3.61	3.10	2.55	2.57	0.01	0.93	1.04
3. Ability to write well	3.64	3.77	3.74	3.21	2.48	2.84	0.43	1.29	0.9
4. Ability to manage time	3.83	4.19	4.53	3.33	2.19	3.06	0.5	2.00	1.47

GENERIC SKILLS	Mean Importance			Mean Accomplish-ment			Difference between Means		
	employer	Staff	Students	employer	Staff	Students	employer	Staff	Students
5. Ability to plan	3.89	4.16	4.1	3.36	2.68	2.98	0.53	1.48	1.12
6. Competence to speak well in public	3.64	3.84	4.02	3.21	2.55	2.37	0.43	1.29	1.65
7. Ability to think laterally	3.85	4.42	4.35	3.26	2.81	3.04	0.59	1.61	1.31
8. Capacity to think logically and critically	3.65	4.16	4.29	3.17	2.68	2.92	0.48	1.48	1.37
9. An understanding of themselves and society	3.65	4.06	4.18	3.11	2.45	2.71	0.54	1.61	1.47
10. Competence to use Library and other information sources	3.63	4.42	4.04	3.22	2.74	2.65	0.41	1.68	1.39
11. Preparation for further postgraduate study or specialist training	3.57	3.84	4.08	3.18	2.52	2.47	0.39	1.32	1.61
12. Capacity to be trainable or re-skilled to changing needs of workforce	4.04	4.35	4.34	3.43	2.71	2.72	0.61	1.64	1.62
13. Knowledge for continued growth and self-development	3.93	4.39	4.25	3.43	2.70	2.74	0.5	1.69	1.51
14. Understanding of career options and career goals	3.68	3.97	4	3.14	2.29	2.39	0.54	1.41	1.61
15. Proficiency in analysing and solving problems in the workplace	4.32	4.52	4.41	3.47	2.71	2.9	0.85	1.81	1.51
16.Capacity to attend to detail	3.76	3.64	3.8	3.22	2.48	2.96	0.54	1.16	0.84
17.Motivation and enthusiasm for work	4.01	4.48	4.1	3.50	3.09	3.22	0.51	1.39	0.88
18.Initiative	3.9	4.29	4.27	3.40	2.52	3.02	0.50	1.77	1.25
19.Capacity to work with minimum supervision	3.90	4.03	3.78	3.36	2.39	2.73	0.54	1.64	0.54
20.Ability to earn a good salary	3.61	3.77	3.92	3.07	2.53	2	0.54	1.24	1.92
21.Ability to generate wealth in Commerce and Industry	3.63	3.74	4.09	2.97	2.47	2.16	0.66	1.27	1.93
22. Development of personal and ethical values	3.93	4.35	3.98	3.46	2.65	3.12	0.47	1.70	0.86
23. Knowledge to appreciate and maintain ethical standards	4.00	4.39	3.86	3.44	2.61	3	0.56	1.78	0.86
24. Awareness of new technology for people	3.47	4.06	4.16	3.03	2.61	2.55	0.44	1.45	1.61
25. Ability to serve society in useful ways	3.51	3.97	3.68	3.17	2.74	2.75	0.34	1.57	0.93
26. Self discipline	3.96	4.29	4.27	3.58	2.55	3.12	0.38	1.74	1.15
27. Self confidence	4.10	4.58	4.67	3.65	3.23	3.27	0.45	1.35	1.4
28. Self reliance	4.08	4.35	4.51	3.61	2.93	3.14	0.47	1.42	1.37
29. Ability to listen to people carefully & understand what they are really saying	3.69	4.03	3.96	3.19	2.81	3.35	0.50	1.22	0.61
30.Sensitivity to other people's problems and difficulties	3.64	4.00	4	3.25	2.74	3.34	0.39	1.26	0.66
31.Ability to elicit accurate information from others	3.86	4.13	4.18	3.44	2.74	2.9	0.42	1.39	1.28
32.Capacity to function affectively as part of a team	4.35	4.29	4.37	3.74	3.09	3.22	0.61	1.20	1.15
33.Ability to avoid and resolve inter-personal conflicts and difficulties	3.83	4.26	4.06	3.25	2.61	2.82	0.58	1.65	1.24

The above table is further illustrated in the following figures and discussions. Figure 2 shows the comparison of perceived importance of the 33 generic skills among the three stakeholders, Employers, Staff and Students.

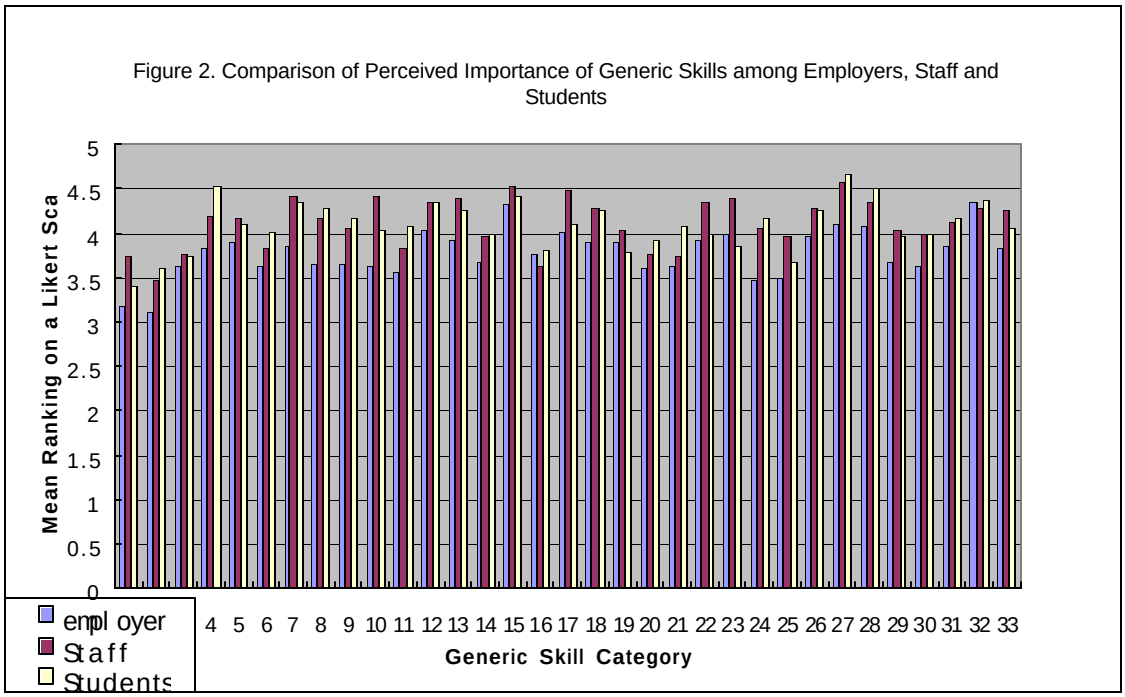


Figure 2 shows that though staff and students usually assign higher scores in terms of the importance of the 33 generic skills than employers, the ranking of the three stakeholders demonstrates a similar pattern, which means all the three stakeholders agree on the sets of generic skills requiring more attentions. However, exceptions exist where the ranking of staff and students is significantly higher than that of employers. The generic skills with the highest gap in terms of perceived importance between employer and staff/students are listed below:

- Ability to think laterally
- Capacity to think logically and critically
- An understanding of themselves and society
- Competence to use Library and other information sources
- Awareness of new technology for people

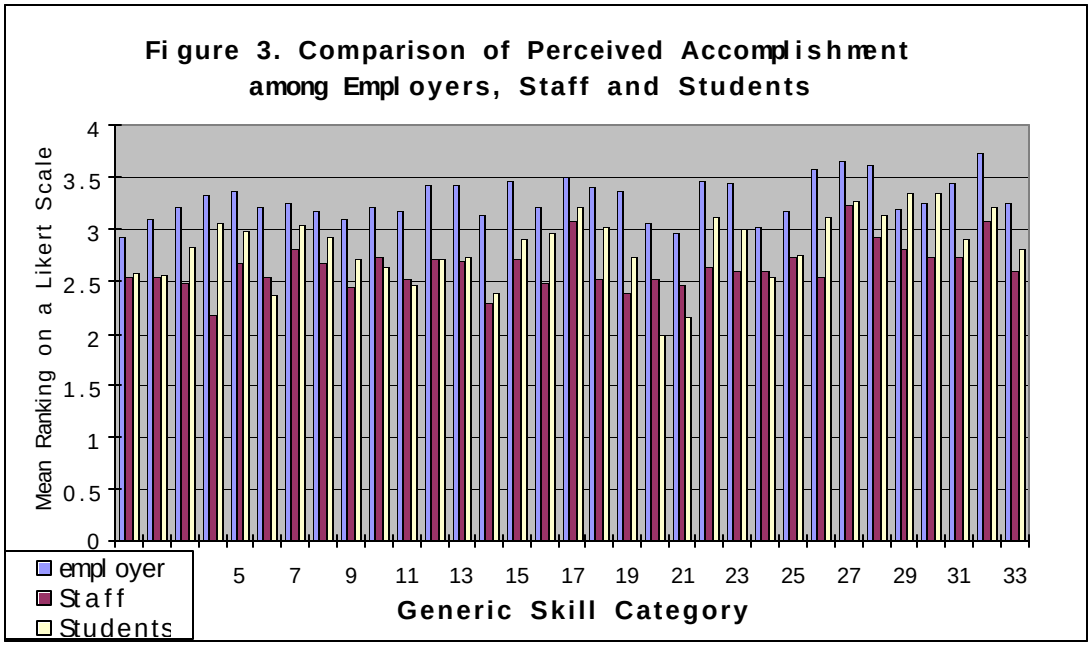
The above skills are seemingly more related to academic studies than to workplace. As discussed previously, the employers are more concerned with work-related skills, so it is not surprising to find out that employers rank the above generic skills significantly lower than staff and students.

Figure 3 compares the difference in perceived accomplishments of the generic skills among the three stakeholders. It can be observed from the bar chart that employers usually give much higher scores in terms of generic skills accomplishments, followed by students and then the staff members, which is a positive result for students as they are well received by the employers. One of the reasons can be that the students from Wenzhou University are not as good at academic study as at work, and the staff members view the generic skill accomplishment of their students largely through their academic performance, which is obviously not the advantage of students from Wenzhou University. As a regional institution, Wenzhou University usually attracts students whose national tertiary education admission examination scores range from low to medium. However, the entrepreneurial spirit of the region and the fact that many students are from families who own one or more businesses have helped to bring up the young generation gifted with business acumen and more adaptable to the requirement of the workplace.

Only in two cases do the employers allocate lower scores in the accomplishment of generic skills than that given by students. The two generic skills are:

- Ability to listen to people carefully & understand what they are really saying
- Sensitivity to other people's problems and difficulties

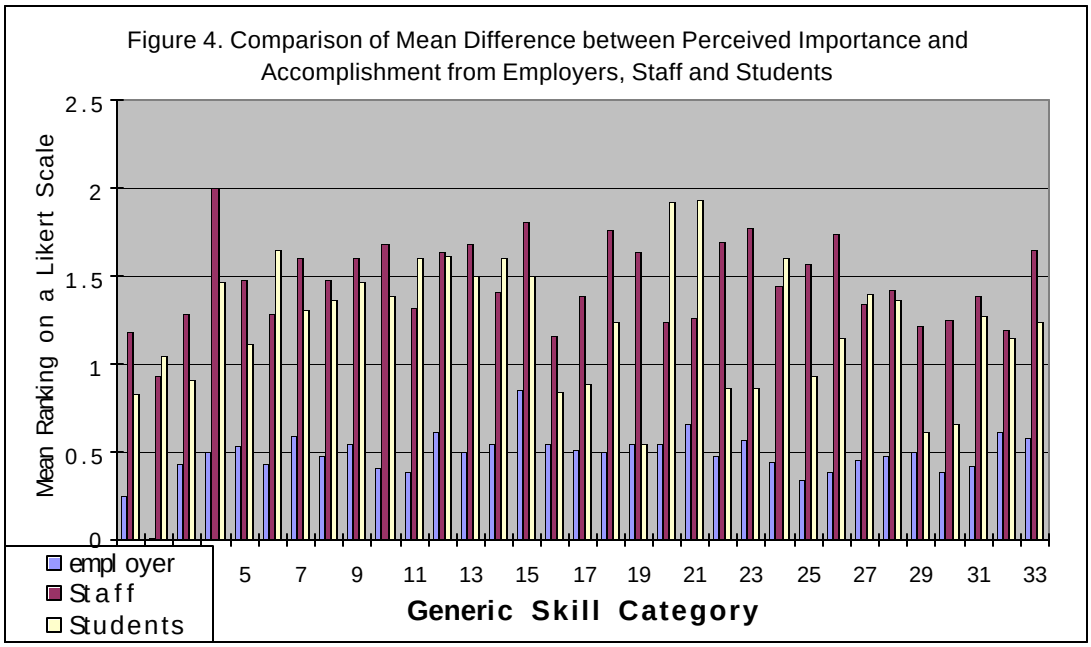
The above interpersonal skills should receive due attention from the students.



All the three stakeholders agree that the gap between importance and accomplishment does exist (Figure 4). The employers, different from the staff and students, seem to be more content with the generic skills accomplishment of university graduates and the gap between perceived importance and accomplishment on the part of employers is the smallest amongst the three stakeholders. This finding indicates that generic skills of the students (employees) can be further developed in their workplace after graduation, sometimes in a more effective manner. Unlike the current university education system in China, on the site training at the workplace emphasizes more on skills. In addition, learning by doing or experiential learning at work will help the students (employees) to learn what they cannot get in the class.

Figure 4 shows the comparison of the differences between perceived importance and accomplishment of generic skills from the three stakeholders.

Figure 4. Comparison of Mean Difference between Perceived Importance and Accomplishment from Employers, Staff and Students



DISCUSSION AND CONCLUSION

From the analysis of the results, the widely accepted view that generic skills are defined in their order of importance according to the views and aims of particular stakeholders is confirmed in this study. Employers in this study generally are more interested in generic skills that are more directly related to employability in terms of relevance to the practical skill needs of their respective enterprise or industry. On the other hand, academic staffs are more interested in generic skills that are related to academic success and socio-cultural understanding. In the case of students, their interest are more towards a combination of employability, academic success and socio-cultural understanding, that is, falling in between the expectations of employers and academic staff.

This study, while not representative of the HEI population of China, can provide an indicative pathway to understanding generic skills development and formation in a transitional economy, particularly those countries that are moving from a socialist to a market economy. The study reflects employers' expectations of their graduates' generic skills in assisting them to achieve their enterprise's objectives. It is not surprising that these expectations are no different to that of other countries, especially the industrialised countries, as the globalisation of production and markets has more or less standardised the operational processes of production and management style and procedures.

From the context of institutional research, this study is of relevance to Wenzhou University, the case study institution, in terms of curriculum evaluation and development, as well as the need to establish formal links with captains of industries so that they can contribute in curriculum design and development and provide information on employment opportunities for the university's graduates.

As this is the first study of this kind in China, as far as the authors of this paper know of, it should provide the groundwork for further studies in other HEI in the nation. Given the spurt of institutional amalgamations, mergers and linkages throughout the country in order to achieve institutional efficiency in the face of diminishing state funding for those institutions outside Project 211, a thorough examination of

generic skills requirements in the context of the nation's ninth Five-Year Plan would assist in reducing duplication and fragmentation of efforts in course delivery as well as increasing cost efficiency and reducing institutional wastage. Perhaps Wenzhou University should provide the catalyst to trigger off a national project on generic skills requirements, development and formation.

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FACULTY PERCEPTION OF ONLINE LEARNING IN A MEDICAL SCHOOL IN MALAYSIA

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INTRODUCTION

The IMU first implemented OLIS (Online Learning Interactive System), a form of web-based learning in March 1999 with the M2/98 intake of medical students. Today, more than seven batches of students have used OLIS. OLIS comprises study guides and problem-based modules (previously in print and referred to as Fixed Learning Modules). OLIS has about 6,000 pages and 10,000 images in terms of content. In addition, it provides a channel for asynchronous communication, that is, an online threaded discussion facility for students to discuss among themselves, and where faculty can either support the discussion further or answer any queries, or provide responses to students' postings.

After two years of OLIS implementation and amidst mixed reviews of OLIS as a valuable component of the curriculum, a survey on online learning among faculty to determine the general perception of faculty towards online learning in general and OLIS in particular was conducted in June 2001. The survey was also seen as necessary to determine not only the attitude but the state of readiness of the faculty as the IMU makes further plans to incorporate e-learning not only for its full-time on campus students but for its future distant learning offerings in other programs of study. Hence, findings of the survey will help determine future action plans as the university embarks on its e-learning initiatives.

RESEARCH METHODOLOGY

The Centre for E-Learning and Multimedia (CELM) conducted a survey among the IMU Faculty to determine faculty's perception of online learning in general and of OLIS in particular. A survey instrument was first drafted by the research team and its items checked for clarity, understanding as well as meaningfulness. After being pilot tested, the survey instrument was revised until no further changes were believed to be necessary. The objective of the survey was to gauge the faculty's perception towards online learning, particularly at the time when E-learning had became the buzzword in higher education. In addition, the IMU had envisaged E-learning to play a significant role in the delivery of its academic programs in the new millennium.

The survey instrument is made up of two parts. The first part comprises questions asking for personal and demographic data such as age, gender, number of years of teaching experience, academic programme and their prior computer or Internet related experiences. The second part comprises items that asked for their perception of online learning in general and OLIS in particular.

A printed survey instrument was then placed in the mailboxes of all faculty members at the university. They were given a week to return the completed forms to a member of the CELM. They were then sent two reminders after the deadline to ensure a higher rate of return. By the time of the survey, the chair of

the Board of Directors of the university had already announced that the university needs to incorporate E-learning as a key component of the university's strategic plans for the next ten years. The survey instrument was designed as an initial survey of academic staff to determine their perception, and hence, readiness to be involved with e-learning initiatives at the university. No other formal survey had been carried out prior to this. This initial survey could lead to a series of other surveys, as part of the university's plan to implement several e-learning initiatives. Hence, the survey was merely descriptive without concern whether there were gender-related or age-related differences or whether there were differences between those who had a short or long teaching experience.

It is to be noted that the IMU had been planning for an IT-culture to set in since the last three years. It has for example, provided an interest-free computer loan to all confirmed faculty members up to the limit of RM8,000.00 to allow them to purchase a suitable computer system. In addition, all faculty members are provided with a computer each for daily use at the work place. All lecture theatres are equipped with state-of-the-art multimedia facilities designed to support effective teaching via the latest technologies. The lecturers can request for multimedia setups for teaching in the smaller teaching rooms whenever required. Most of the faculty members have been through at least basic software use (word processing, presentation software and spreadsheet) to help upgrade their IT skills. Hence, the IMU has been supportive of IT use in the teaching and learning environment in their endeavour to support an IT using culture among its academic staff.

LITERATURE REVIEW

The use of IT in higher education is now increasing at a rapid pace. It seems to make sense to leverage on IT to help make learning more effective, more efficient and to provide the new generation of students with the most innovative mode of learning. Use of IT has also been perceived to help universities become more competitive as more and more universities set up new academic programmes with alternative modes of delivery, particularly in adapting use of the Internet to deliver its distance learning programmes (Jiang & Ting, 1999), virtual schools (Harden and Hart, 2002; Nattestad, Attstrom, Mattheos, Ramseier, Canegallo, Eaton, Feeney, Goffin, Markovska, Maixner, Persson, Reynolds, Ruotoistenmaki, Schittek, Spohn, Sudzina, 2002), off-campus learning (Broudo and Walsh, 2002) and developing various web-based learning resources (Broudo and Walsh, 2002; Grundman, Wigton and Nickol, 2000). Some universities have begun to collaborate in offering academic programs on a worldwide basis (Harden and Hart, 2002; Matthies von Jan, Porth., Tatagiba, Stan, Walter, 2000).

In addition, with the pervasiveness of computers and the Internet in education, academic staff would have to adapt themselves quickly to using IT (Massy & Zemsky, 1995; Hoffman, Irwin, Lignon, Murray and Tohsaku, 1995). They can no longer choose to work without the computer, as the educational environment will expect them to. To stay away from the computer would mean that the academic staff would not only be left behind but be at a great disadvantage. The amount of information available on the web is overwhelming. Both faculty and students need to be taught how to manage the plethora of information effectively. There are some reports in the literature describing how some medical schools are rising to the challenge to see how ICT can be utilised to enhance teaching-learning activities (Ward, Gordon, Field, Lehmann, 2001; Jones, Higgs, de Angelis, Prideaux, 2001). Fieschi *et. al.* (2002) had reported that in their medical school, the faculty and students in their medical school responded favourably to teaching and learning through computer applications and the Internet (Fieschi M, Soula G, Giorgi R, Gouvernet J, Fieschi D, Botti G, Volot F, Berland, 2002).

The Malaysian government, for example, has been promoting the need for an intelligent workforce and the requirement for knowledge workers to develop its economy further from an industrial-based economy to one that is knowledge-based. This requires an information literate person who will make use of IT to

find, analyse, manipulate and present new information. Hence, students must go through academic programmes that will require the integration of IT or otherwise be handicapped and ill prepared for the working world.

As Internet use becomes more and more prevalent and widespread, it is expected that the Internet will be one of the delivery modes of learning today. It is thus essential to see how far members of the academic staff are willing to make the change from traditional modes to electronic modes of learning. It is believed that there is a relationship between perception and the success of online learning (Fieschi M, Soula G, Giorgi R, Gouvernet J, Fieschi D, Botti G, Volot F, Berland, 2002; O'Malley, 1999). It is also necessary to find out what will make academic staff fully support the implementation of online learning, particularly if their input includes providing content as the subject-matter expert is required or their participation online is expected. As Berg (2000) suggested, compensation for faculty involved in providing content for distance learning needs to be properly addressed.

SURVEY AMONG IMU FACULTY

Thirty five academic staff out of a maximum of 56 lecturers (full-time) responded to the survey at the IMU. This included 24 males (68.6 percent) and 11 females (31.4 percent). This is reflective of the actual ratio between male and female among academics at the university. The academic staff surveyed were those involved in the teaching of medical (N=14), clinical (N=15) and pharmacy (N=4) programmes. Two persons had not indicated their affiliation. It appears that almost all clinical academic staff had responded to the survey but only about half from the medical had done so. The survey was done at the time when another survey was also being conducted by another researcher and amidst a busy point in the semester when examinations were being held. This possibly accounted for the lesser rate of response among the academic staff in the medical sciences. IMU is also establishing a nursing programme but the two nursing faculty who were already on board at the time the survey was administered had not returned the survey forms. It is to be noted however, that the nursing programme will use the Internet to deliver its nursing program (distance learning).

The ages of the respondents ranged from 28 to 74 years. Sixteen respondents were aged 40 years (45.7 percent) and below while 17 (48.6 percent) were above 40 years of age. Two had not indicated their respective ages on the survey forms. Hence, the number of respondents was well-distributed between the above 40 and below 40 groups.

In terms of the number of years of teaching experience, 11 respondents (31.4 percent) had five or less years of teaching experience, six respondents (17.1 percent) had between six and ten years of teaching experience and 15 respondents (42.9 percent) had more than 10 years of teaching experience. Three respondents did not answer. Hence, about half of the respondents had ten years or less of teaching experience while the other half had more than ten years of teaching experience.

Table 1
Presence of Computer and Internet Facilities at Home

Computer and Internet Facilities at Home	Yes {N (%)}	No {N (%)}
(a) Have computer at home	32 (91.4%)	2 (2.9%)
(b) Have Internet at home	30 (85.7%)	5 (14.3%)

To determine their level of computer and Internet experience, the survey instrument included questions asking whether they a computer and Internet access at home. Table 1 indicates that 91.4 percent of respondents had a computer at home while 85.7 percent had access to the Internet from their homes. This indicates that the IMU academic staff consistently uses the Internet both at home and at work.

Table 2
Perceived Adequacy of Computer Skills

Adequacy of Computer Skills	Yes {N (%)}	No {N (%)}
(a) Computer skills adequate for present needs	23 (65.7%)	11 (31.4%)
(b) Usually need technical help when using the computer	10 (28.6%)	24 (68.63%)

Table 2 is a summary of the perception among academic staff of their computer skills. Whether they felt they had computer skills that were adequate for their present needs, the majority, that is, 65.7 percent agreed while 31.4 percent of the academic staff felt they did not have adequate computer skills for their present needs, that is, teaching.

Table 3 shows a summary of how faculty members perceived their various skills in using some of the more common software and the Internet. Scanning is listed because of the immense amount of images usually required in the teaching of medical sciences and clinical teaching in the classroom. Based on the survey, a majority of academic staff felt that their skills were at the intermediate or advanced level in word processing, e-mailing, surfing the web, the use of a presentation software such as PowerPoint and in the online search for literature. One person or 2.9 percent of academic staff indicated that he had no skill in using any presentation software. While a combined 81.8 percent of the academic staff were able to use graphics applications software, 18.2 percent indicated they had no skill in using such a package. A majority, that is, 70.6 percent of academic staff did not have the skill on how to create a home page and 17.1 percent did not know how to scan images using a scanner. In general, the academic staff at the IMU can be considered adequately competent in IT with very few requiring basic IT training. The majority will need either intermediate of advanced level of training in using the common applications software.

Table 3
IT Competency Among Faculty

Type of Skill	Level of Competency			
	None N (%)	Beginner N (%)	Intermediate N (%)	Advanced N (%)
(a) Word Processing	0 (0%)	2(5.7%)	24 (68.6%)	9 (25.7%)
(b) Graphics*	6 (18.2%)	15 (45.5%)	11 (33.3%)	1 (3.0%)
(c) E-mailing	0 (0%)	3 (8.6%)	24 (68.6%)	8 (22.9%)
(d) Surfing the Web	0 (0%)	2 (5.7%)	29 (82.9%)	4 (11.4%)
(e) Creating a Home page**	24 (70.6%)	9 (26.5%)	1 (2.9%)	0 (0%)
(f) Presentation software *(e.g. Power-point)*	1 (2.9%)	5 (14.3%)	21 (60.0%)	8 (22.9%)
(g) Scanning images	6 (17.1%)	15 (42.9%)	9 (25.7%)	5 (14.3%)
(h) Literature search	0 (0%)	6 (17.1%)	21 (60.0%)	8 (22.9%)

* N=33, **N=34

Table 4
Frequency of IT Use Among Faculty

Description of Computer Use		Frequency of Computer Use				
		Not at all	< 2 hrs per week	2 - 10 hrs per week	11 - 20 hrs per week	>20 hrs per week
		N (%)	N (%)	N (%)	N (%)	N (%)
(a) Computer use on campus	N (%)	1 (2.9%)	2 (5.7%)	10 (28.6%)	9 (25.7%)	13 (37.1%)
(b) Computer use out of campus	N (%)	2 (6%)	9 (27.3%)	16 (48.5%)	4 (12.1%)	2 (6.0%)
(c) Word processing for work-related purposes	N (%)	2 (5.7%)	2 (5.7%)	13 (37.1%)	7 (20%)	11 (31.4%)
(d) Word processing for personal purposes	N (%)	2 (5.9%)	17 (50%)	9 (26.5%)	3 (8.8%)	3 (8.8%)
(e) E-mailing for work related purposes**	N (%)	1 (2.9%)	8 (22.9%)	19 (54.3%)	3 (8.6%)	4 (11.4%)
(f) E-mailing for personal purposes	N (%)	1 (2.9%)	23 (67.6%)	5 (14.7%)	1 (2.9%)	4 (11.8%)
(g) Internet for work-related purposes	N (%)	0 (0%)	10 (30.3%)	13 (39.4%)	7 (21.2%)	3 (9.1%)
(h) Internet for personal purposes	N (%)	5 (14.7%)	17 (50.0%)	6 (17.6%)	3 (8.8%)	3 (8.8%)
(i) CAL	N (%)	17 (50.0%)	14 (41.2%)	3 (8.8%)	0 (0%)	0 (0%)
(j) PowerPoint to deliver scientific papers/lectures	N (%)	3 (9.4%)	10 (31.3%)	10 (31.3%)	5 (15.6%)	4 (12.5%)
(k) Online literature search (e.g. OVID, MD Consult, etc.)	N (%)	2 (5.7%)	16 (45.7%)	12 (34.3%)	3 (8.6%)	2 (5.7%)

The survey also sought to find out the frequency of IT use among academic members. As Table 4 indicates, some 37.1 percent of academic staff use the computers on campus for more than 20 hours per week. Official working hours at the university is 40 hours per week, that is, from 8:30 to 5:30 every day, five days a week with a one-hour lunch break. Hence, slightly more than one third of academic staff spend a lot of time on the computer. About half, that is, 48.5 percent of the academic staff spend between two and 10 hours on the computer at home. Another 18.1 percent of the academic staff use their computers at home for at least 11 hours or more per week. This generally indicates frequent use of the computer both on campus and at home among the academic staff.

The most use (11 hours or more per week) of the computer appears to be for word processing (51.4 percent) for work related purposes, followed by Power Point (28.1 percent) to deliver lectures and scientific papers. Among academic staff, 30.3 percent use the Internet for their work for 11 hours or more per week. In addition, 20 percent of academic staff spend 11 hours or more per week, e-mailing for work-related purposes. In the use of computers for CAL (Computer-Assisted Learning), only 8.8 percent of academic staff use CAL for 2 to ten hours per week in their teaching, while 41.2 percent use CAL for less than two hours per week. Half, that is, 50 percent of the academic staff do not use CAL. It is to be noted that CAL for Pharmacy is expected to be part of the curriculum while those teaching the medical and clinical curriculum have access to a significant number of CAL titles in their respective libraries.

While the first part of the survey instrument collected personal data and data related to IT use, the second part of the survey instrument had items that investigated the academic staff's perception of online learning in general and OLIS in particular. These items required a response based on a five point Likert scale ranging from strongly disagree (1) to strongly agree (5). The findings are summarized in Tables 5 and 6, respectively.

Table 5 lists the responses of academic staff to statements that contribute to their overall perception of online learning. A majority (88.2 percent) agreed that online learning offers a flexible learning environment and 88.5 percent agreed that online learning offers convenience. On whether online learning makes learning more efficient, 57.1 percent agreed that it did. Most (88.5 percent) felt that online learning is an interesting learning tool. A majority (82.9 percent) agreed or strongly agreed that materials can be easily updated and 88.6 percent felt that online learning can be used to support on-campus learning. Eighty percent thought online learning is expensive to develop initially. Most (85.7 percent) believe online learning can be interactive. Although 88.6 percent believe that it is an upcoming trend in education, 77.2 percent believe that we should adopt online learning with caution.

Faculty members were next asked what their perception to OLIS were. It should be noted that OLIS is used primarily by students in the medical sciences. As such, most of the content was contributed by academic staff in the medical sciences. The findings of the survey revealed that 12.1 percent of the academic staff had never used OLIS. Four academic staff were teaching pharmacy students (and hence were not required to access OLIS). Whether the four who never did access OLIS were from Pharmacy needs to be verified. Another 54.5 percent of the academic staff reported that they use OLIS occasionally. Almost one-fifth, that is, 18.2 percent of the academic staff stated that they accessed OLIS once a month and 15.2 percent reported that they access OLIS once a week. Note that faculty is expected to contribute or respond to postings in the online discussions but because of the lack of policy, responses from faculty have been rather low. Most faculty have little need to access the content, particularly by academic staff in clinical teaching and pharmacy.

Table 6 summarizes the perception of the faculty towards the respective statements. A majority, that is, 86.6 percent agreed that OLIS offered a flexible learning environment. Eighty percent reported that OLIS offered convenience and 36.7 percent agreed that OLIS makes learning efficient. About half, that is, 56.7 percent was not sure whether OLIS was efficient. Most (83.3 percent) faculty members regarded OLIS to

be an interesting learning tool, although 63.3 percent said that it is expensive to develop initially. On whether learning materials can be easily updated in OLIS, 66.6 percent agreed that it was while another 33.3 percent felt that it was not. Most (73.4 percent) of academic staff stated that OLIS can support on campus learning. OLIS can be interactive and this is agreed by 86.7 percent of the academic staff. More important, 66.7 percent of academic staff reported that images in OLIS are useful for student learning and some 62.4 percent believe that online discussions in OLIS can enhance learning. On the latter two, only 30 percent were unsure whether images in OLIS are useful and only 20.7 percent were unsure that online discussions in OLIS could enhance learning. It can be summarized that the perception among academic staff of OLIS is generally positive, with the majority agreeing to most of the statements listed in the survey instrument.

The above is a summary of faculty perception of online learning in general and OLIS in particular. There were several open-ended questions on the survey instrument. In view of the IMU's plans to incorporate e-learning to deliver its academic programmes, academic staff were asked, "In your opinion how fellow faculty members could be encouraged to develop more interactive content for OLIS?" Responses included:

- Retention of copyright of content by faculty members who develop them
- More protected time for faculty
- Faster Internet connection
- Faculty offered monetary reward
- Faculty offered recognition for their efforts
- Online materials developed by faculty considered as "publication"
- Workshops organized to get faculty to develop contents together
- Competition held for best "OLIS material" produced
- Motivation and guidance provided by heads of department

Table 5
Faculty Perception of Online Learning

Question		Response {N (%)}				
		1	**2**	**3**	**4**	**5**
(a)	*It offers a flexible learning environment.**	0 (0%)	1 (2.9%)	3 (8.8.%)	22 (64.7%)	8 (23.5%)
(b)	It offers convenience.	0 (0%)	1 (2.9%)	3 (8.6%)	25 (71.4%)	6 (17.1%)
(c)	It makes learning efficient.	0 (0%)	1 (2.9%)	14 (40.0%)	18 (51.4%)	2 (5.7%)
(d)	It is an interesting learning tool.	0 (0%)	2 (5.7%)	2 (5.7%)	25 (71.4%)	6 (17.1%)
(e)	The learning material can be easily updated.	0 (0%)	3 (8.6%)	3 (8.6%)	19 (54.3%)	10 (28.6%)
(f)	It can support on campus learning .	0 (0%)	2 (5.7%)	2 (5.7%)	21 (60.0%)	10 (28.6%)
(g)	It is expensive to develop initially.	0 (0%)	2 (5.7%)	5 (14.3%)	14 (40.0%)	14 (40.0%)
(h)	It can be interactive.	0 (0%)	1 (2.9%)	4 (11.4%)	27 (77.1%)	3 (8.6%)
(i)	It is an upcoming trend in education.	0 (0%)	1 (2.9%)	3 (8.6%)	23 (65.7%)	8 (22.9%)
(j)	It should be adopted with caution.	0 (0%)	4 (11.4%)	4 (11.4%)	22 (62.9%)	5 (14.3%)

*N=34,

Table 6
Faculty Perception of OLIS

	Question	Response {N (%)}				
		1	**2**	**3**	**4**	**5**
(a)	*It offers a flexible learning environment**	0 (0%)	3 (10.0%)	1 (3.3%)	22 (73.3%)	4 (13.3%)
(b)	It offers convenience*	0 (0%)	3 (10.0%)	3 (10.0%)	20 (66.7%)	4 (13.3%)
(c)	It makes learning efficient*	0 (0%)	2 (6.7%)	17 (56.7%)	9 (30.0%)	2 (6.7%)
(d)	It is interesting learning tool*	0 (0%)	0 (0%)	5 (16.7%)	22 (73.3%)	3 (10.0%)
(e)	It is expensive to develop initially*	0 (0%)	5 (16.7%)	6 (20.0%)	16 (53.3%)	3 (10.0%)
(f)	The learning material can be easily updated*	0 (0%)	6 (20.0%)	4 (13.3%)	16 (53.3%)	4 (13.3%)
(g)	It can support on campus learning*	0 (0%)	2 (6.7%)	3 (10.0%)	20 (66.7%)	5 (16.7%)
(h)	It can be interactive*	0 (0%)	2 (6.7%)	2 (6.7%)	23 (76.7%)	3 (10.0%)
(i)	Images available on OLIS are useful for student learning*	0 (0%)	1 (3.3%)	9 (30.0%)	17 (56.7%)	3 (10.0%)
(j)	Online discussions can enhance learning***	0 (0%)	2 (6.9%)	6 (20.7%)	17 (58.6%)	4 (13.8%)

*N=30, **N=27, ***N=29

On whether IMU should increase its commitment to online learning and why, 12 (62.9 percent) of the 35 surveyed respondents said yes and one (2.9 percent) individual said no. This implies that the rest, or 34.2 percent of the academic staff seem to have no feelings either way. Reasons given for IMU to increase its commitment to online learning included:

- Trendy! Keeping in step with the trend

- Complements classroom/clinical teaching
- Help bring in more income
- Reduce student/teacher contact
- Time-saving tool for lecturers
- Can reduce teaching load on staff, especially when there is a shortage
- Newer technique to equip young doctors with lifelong learning skill
- Can be cost-effective and contribute to efficiency in the running of the university.

DISCUSSION AND CONCLUSIONS

The survey aimed to investigate the perception of online learning among academic staff the IMU. It is believed that member of the faculty contribute to the success of any academic programme. Any innovations in particular will require extra effort in the planning and the implementation to see it through. It is thus necessary that every academic staff is supportive of any innovation and it is important that the administrators of the university are assured of such. The findings suggest that academic staff have positive computer experiences, based on their frequency and purpose of computer usage. Most staff had computers at home and they use them after office hours. In other words, the academic staff were found to be mostly computer literate and had already acquired the basic skills. Nevertheless, some skills may need to be developed further to the intermediate or advanced levels. The academic staff were also found to have positive attitudes toward online learning in general. However, when asked how they might feel happier contributing to the success of online learning, particularly in developing content, they were honest in saying that compensation or rewards need to be planned in. In addition, they need protected time to develop content and workshops to develop content together.

The survey is an initial study to gauge the faculty perception in view of the IMU's future efforts to incorporate e-learning initiatives at the university in all its current and future academic programmes. The findings were to enable plans to be fine-tuned and interventions planned in to ensure that every academic member "buys" the concept, agree to the benefits and advantages of online learning and the importance of their participation as subject matter experts.

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A COMPARATIVE ANALYSIS OF THAI ACADEMIC STAFF PERCEPTIONS OF THEIR WORK AND RELATED ISSUES IN RESEARCH AND OTHER UNIVERSITIES

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and
Uachit Thasnapark

INTRODUCTION

As noted by Gordon at SEAAIR 2001 inaugural Forum there is a dearth of comparative institutional research within the Australasian region. Such research has the potential to improve university quality processes through, for example, effective benchmarking and the identification of best practices within our region. This paper reports on a comparative analysis based on investigation undertaken on academic staff workload and related issues in a research and a teaching and learning higher education institution in Thailand.

Accordingly, this study focuses on a survey undertaken in Thailand's two universities on academic staff perceptions of their teaching and non-teaching workloads, working conditions and career perceptions, level of commitment to various academic tasks, satisfaction with salary and work benefits and changing patterns of academic work. It will compare and contrast the varying emphasis on teaching and research in the two types of Thai universities.

RESEARCH METHODOLOGY

This study is based on two separate projects undertaken by the three authors and as reported at the 2001 Inaugural SEAAIR and 2002 AAIR Forum. Both studies were based on an instrument developed by Prof. Craig McInnis in a national project undertaken in Australia (McInnis, 1999). The McInnis instrument is based on studies undertaken in Australia in 1993 and 1999 with the latter incorporating some new items based on the study conducted for the Dearing Inquiry into Higher Education in the United Kingdom.

A brief description of the research process followed in each of the two studies is described below:

The survey instrument was translated from English into Thai and piloted at the Bangkok University with essentially a Teaching and Learning Mission in late 2001. Following this pilot stage, some minor changes were made to the survey instrument (essentially it was found to be readily understood by the persons with whom it was pre tested) and subsequently it was despatched to staff from various Faculties using convenience sampling. In total 30 questionnaires were sent to academic staff from the university with 29 completed survey instruments returned by academic staff to the researchers. The sampling procedure was as follows:

- The total population was stratified by faculty.
- Each strata was then subject to convenience sampling; convenience sampling was used because of the general resistance by academic staff to participate in surveys of this nature. This suggests that there are some limitations of the study but because it is a pilot hypothesis generating study, it is believed that the methodology is justified in this case.

The above procedure was replicated with a second Bangkok University but this time with a comprehensive research mission (in addition to carry out a teaching and learning function). The same instrument was used and a convenience sampling procedure as described above was applied. The results from the two studies were analysed statistically with view to identifying similarities and differences in perceptions of academics emanating from universities with different mission.

LITERATURE REVIEW

As part of its strategic planning process, the Pennsylvania State University undertakes a survey of staff perception of their working environment, commitment to university and related issues. The latest staff survey was undertaken in 1996 (www.ohr.psu.edu/F&S_SURVEY) and found that approximately 60% of the responding staff indicated that the University was "one of the best" or/an "above average" place to work. It also found that 97% of administrators and executives agreed that they are committed to the university's progress and success compared to 90% of the academic staff and 81% of the Technical Support Staff. The study reports that responses to this questionnaire item suggests commitment and pride does translate into job loyalty for most respondents but not all since, for example, 26% of academic staff indicated that if they had an opportunity to get another job with equal pay, benefits and working conditions they would probably move from this university.

Meyer (1998) suggests that a number of factors have created an interest in academic workload and productivity within the United States of America. She states that the baby boom "echo" is expected to hit American Higher Education increasing the demand for places and hence academic staff in such institutions. Further Meyer (1998) also observes that more working adults need increased training and re-training. Further, it is stated that USA Higher Education sector is facing rising university costs and since personnel budget often constitutes 80% to 90% of Institution's budgets, State legislators become increasingly interested in ways to increase the productivity of personnel by focusing on academic workload studies. Meyer (1998) also observes that the business community has been a major critic of the quality and productivity of modern American Universities. Further many US legislators view higher education as unproductive and unaccountable. In addition, Meyer (1998) suggests that the public is caught in a bind; post secondary education is increasingly important for access to better jobs, but at the same time, increases in tuition fee are putting higher education out of reach of the ordinary American citizens. She suggests that these sets of concerns increased the pressure to find ways to improve academic staff productivity in higher education in America.

A study undertaken at the University of Scranton during 1996, inter alia, considered issues related to academic workload and responsibilities. It found that the modal teaching load of academic staff was between 9 and 12 hours per week. Further, the modal time that academic staff spend on preparation for teaching was between 13 to 16 hours per week. A further 5 to 8 hours per week was spent by academic staff on student advising/counselling, on the average. The study (www.uofs.edu/ms/faculty.html) also reported that academic staff time on committee work and meetings generally accounted for 1 to 4 hours per week. Finally the study found that academic staff from this university spend more time on research and scholarly writing than those from other similar American universities. Although the time spend on such activities is not stated, it indicates that the modal publication was 1 to 2 articles with 31% of academic staff writing 1 to 2 chapters and edited volume and 26% publishing 1 or 2 books, manuals or monographs.

Ferrara (1998) undertook a survey of academic professionals at the University of Illinois at Springfield. The study findings can be summarised as follows:

- 79% of the academic staff cited salary among the top four job related concerns.
- 54% of such staff cited opportunities for career advancement as one of their top four concerns.
- 52% of academic staff cited job security as among the top four job related concerns.
- 59% of academic staff indicated that their retirement package (superannuation) was among their top concern.
- 37% reported that the morale of their academic unit is more positive than it was five years ago with 22% reporting no change in the morale and 40% reporting the morale of the unit is more negative than it was five years ago. 56% of the academic staff reported that they find their workplace environment to be stressful.

As previously reported, McInnis (1999) undertook inter alia, a survey of academic staff perception of the workload and related issues. McInnis also contrasted his 1999 findings with an earlier study undertaken in 1993. McInnis (1999) found high levels of commitment by academic staff to their profession; the proportion of academic staff who have a much stronger interest in research than teaching increased from 35% in 1993 to 41% in 1999; the level of general job satisfaction dropped from 67% in 1993 to 51% in 1999; and 55% of the respondents believed that their working hours had substantially increased over the last five years.

SURVEY OF THAI ACADEMIC STAFF

Prior to analysing the detailed findings of the surveys, it is important to consider some contextual information related to the research. Forty two responses were received from the teaching and learning University and the Thai research University. Two thirds of these respondents were drawn from the Teaching and Learning Institution with one third emanating from the research University. The academic staff participating in the study from the research Institution were drawn mainly from the Humanities (54%) and Applied Science (38%) disciplines. However, and at the Teaching and Learning Institution, all the Seven major faculties including Humanities Engineering), Business, Applied Sciences, Accountancy, Economics and Communication Arts were represented in the responses received. Finally, regarding gender balance the research University respondents had a majority of males (54%) whereas the Teaching and Learning institution was predominantly represented by female academics (62%); these gender proportions are congruent with the total population of academic staff within the two universities.

The first series of questions considered the work preferences of academic staff on a five point Likert scale ranging from strongly agree (1) to strongly disagree (5). The overall results of these questions are contained in Table 1 below. This Table allows the following comparisons regarding the work preferences of the Thai academics drawn from the two universities with different missions:

- The research University staff were more likely to agree that they have an interest in both teaching and research, have a much stronger career interest in research than teaching, had sustained an improvement in their job satisfaction over the last five years, would again choose an academic career and were generally satisfied with their job than was the case with respondents drawn from the teaching and learning institution.

- On the other hand, academics drawn from the teaching and learning University were more likely to agree that they had a stronger career interest in teaching than research, they subordinate most aspects of their life to their work, that their work commitments leave them very little time to themselves and that they were actively seeking a change of job at the time of the survey.

? It appears that the academics drawn from the two types of universities had a similar opinion regarding several issues including their lack of interest in Administration relative to teaching and research, they tended to be more motivated by the intrinsic interest in their work rather than by material rewards, their job was a source of considerable stress and they tended to disagree that this was not a good time for a young person to aspire to an academic career within their discipline.

TABLE 1: WORK PREFERENCES OF THAI ACADEMIC STAFF

ITEM	MEAN AGREEMENT		
	Teaching Learning University	**Research University**	**% Difference**
I have an interest in both Teaching and Research	1.83	1.54	+19
I have a much stronger career interest in Research than Teaching	3.41	3.00	+14
I have a much stronger career interest in Teaching than Research	2.46	3.08	-20
I have a much stronger career interest in Administration than in Teaching and Research	3.79	4.00	-5
I am more motivated by intrinsic interests in my work than by material rewards	1.62	1.62	0
I subordinate most aspects of my life for my work	2.11	2.42	-13
My work commitments leave me very little time to myself	2.21	2.58	-14
My job is source of considerable Stress	2.36	2.42	-3
My overall satisfaction with my job has improved over the last five years	2.66	2.38	+12
I am actively seeking a change of job at the moment	2.14	2.83	-24
This is not a good time for any young person to aspire to an academic career in my discipline	4.2	4.08	+3
If I had the choice again I would choose to be an Academic	2.38	1.62	+47
Generally speaking I am satisfied with my job	2.00	1.69	+18

Table 2 below specifies academic staff commitment to particular tasks using a 5-point Likert scale ranging from strongly committed (1) to not committed (5) in the two Thai universities. It reveals that the research University academics had a greater commitment to a range of tasks including Research activity, supervision of postgraduate thesis, publication of research findings, presentation of research at conferences and the teaching of postgraduate coursework students. On the other hand academic staff drawn from the teaching and learning university were more committed to undergraduate teaching and Committee work. However, the two groups of academics sustained about the same level of commitment to the pastoral care of students, community service and administrative work.

TABLE 2: LEVEL OF COMMITMENT TO TASKS BY ACADEMICS AT A THAI UNIVERSITY

ITEM	*MEAN COMMITMENT*		
	Teaching and Learning University	**Research University**	**% Difference**
Research activity	2.93	2.08	+41
Postgraduate thesis Supervision	3.48	2.15	+62
Publication of Research Findings	3.21	2.92	+10
Undergraduate Teaching	1.38	1.54	10
Pastoral care Of students	1.69	1.77	4
Presentation of Research at Conferences	3.07	2.69	+14
Postgraduate coursework Teaching	3.63	1.85	+96
Community Service	2.48	2.31	+7
Committee Work	2.21	2.46	-10
Administrative Work	3.17	3.00	+6

Table 3 provides the academic staff perceived satisfaction with certain salary and work benefits in the Teaching and Learning and Research intensive Thai universities. It reveals a consistent pattern of results, namely, the research University academics were more satisfied with all 5 items (academic salary, job security, study leave policy Conference travel and attendance and pursuing their academic interest) than was the case with faculty drawn from the teaching and learning University.

TABLE 3: SATISFACTION WITH SALARY AND BENEFITS

ITEM	MEAN STATISFACTION		
	Teaching and Learning University	**Research University**	**% Difference**
Your academic salary	3.17	2.38	+33
Security of your job	2.21	1.92	+15
Study leave policy	3.02	2.31	+31
Conference attendance and travel policy	3.10	2.38	+30
Opportunity to pursue your own academic interest	2.93	2.08	+41

Table 4 specifies academic staff perception of what is currently rewarded in comparison to what should be rewarded in the two Thai universities. In regards to what is currently rewarded by the Universities, the teaching and learning institution academic staff had a consistently greater percentage on all 7 items included Table 4; nevertheless, the greatest differences in emphasis within the two types of universities as to current rewards include contribution to committees, effectiveness as a teacher and length of service. In terms of future rewards, the following observations are made:

? A reasonable degree of agreement exists between the two Institutional types including rewarding administrative/leadership skills and possibly effectiveness as a Teacher.

? The greatest divergence of viewpoints emerging is in relation to the future rewarding of the ability to attract external funds and length of service, where the teaching and learning university academic staff would like to see much greater emphasis to be given than is the case with Research University Academics.

TABLE 4: REWARD SYSTEM FOR ACADEMICS AT THAI UNIVERSITY

ITEM	% OF RESPONDENTS					
	NOW REWARDED			SHOULD BE REWARDED		
	T & L Uni	Res. Uni	% Diff	T & L Uni	Res. Uni	% Diff
Research/Scholarly activity	88.9	71.4	+24	83.3	66.7	+25
Ability to attract external funds	75.0	42.9	+75	88.9	42.9	+107
Administrative/Leadership skills	57.1	33.3	+71	73.9	66.7	+11
Contribution to Committees	90.9	20.0	+354	73.7	60.0	+23
Effectiveness as a Teacher	85.7	42.9	+100	87.0	75.0	+16
Community Service	50.0	33.3	+50	79.2	55.6	+42
Length of Service	66.7	33.3	+100	79.2	44.4	+78

Table 5 provides the mean estimated academic workload during the teaching period in the Teaching and Learning and the Research-intensive Thai higher education institutions. During the teaching semester, teaching and learning University tends to generate greater academic efforts with respect to teaching classes, other teaching related activities, theses supervision and other major activities. On the other hand, research Thai university produced greater workloads from research/scholarship, administration, consultancy and public/community service.

TABLE 5: MEAN ESTIMATED HOURS PER WEEK DURING TEACHING PERIOD

ACTIVITY	AVERAGE HPW DURING TEACHING		
	T & L Uni	Res Uni	% Diff
Teaching Classes	11.48	9.32	+23
Teaching Related Activity	13.95	8.41	+66
Thesis Supervision	6.58	5.32	+24
Research/Scholarship	2.50	5.11	-41
Administration	8.71	9.87	-12
Consultancy	7.81	8.90	-12
Public/Community Service	4.12	6.83	-40
Other Major Activities	5.00	4.00	+25

Table 6 specifies essentially the same data as table 5 but pertains to non-teaching period for the two types of Thai universities. It is noted that during non- teaching period research University academics sustained greater load with respect to theses supervision, research/scholarship, consultancy and public/community service than was the case with the teaching and learning University. Conversely, the latter experienced greater efforts with respect to teaching classes, and other teaching related Activity.

TABLE 6: ESTIMATED AVERAGE HPW DURING NON-TEACHING PERIOD

ACTIVITY	AVERAGE HPW DURING TEACHING		
	T & L Uni	**Res Uni**	**% Diff**
Teaching Classes	5.25	4.20	+25
Teaching Related Activity	10.31	7.70	+34
Thesis Supervision	3.45	5.40	-36
Research/Scholarship	4.44	5.88	-24
Administration	12.19	13.88	-12
Consultancy	5.55	9.56	-42
Public/Community Service	3.50	5.14	-32
Other Major Activities	5.75	5.08	+13

Table 7 provides the respondents perception of the changing pattern of academic work in the case study Thai Universities over the past 5 years. The following key observations can be made from the data contained in this Table:

- A majority of academics experienced substantial increase in workload with respect to teaching classes, other teaching related activities and (almost) Administration.

- A majority of academics experienced no change in regard to efforts required on research/scholarship, consultancy, public/community service and other major activities.

- Only a relatively small proportion of academic staff from both Institutional types experienced substantial decreases in workload with respect to the activities listed in Table 7.

Table 8 specifies the activities that had the most impact on academic working hours over the past five years in the Teaching and Learning and Research-intensive universities. It permits the following observations:

- Committee work, liaising with administrators, providing Academic support for students, developing course materials for new technologies, doing their own word processing, providing pastoral care for the students, keeping up to date in their own fields, own professional development and international exchange programs resulted in increased hours and thus negatively impacting on academic workloads for staff drawn from both Institutional types.

- In research university greater and increased hours emanated from designing and scanning online materials and offshore academic work.

? Decreased hours only affected a relatively small proportion of academic staff drawn from both Institutional types.

? A majority of academic staff from both types of institutions experienced no change in their academic work hours with respect to seeking funds to support academic work, marketing and promotional activities, supervising casual and subordinate staff, industry liaison and offshore academic activities.

TABLE 7:CHANGING PATTERNS OF ACADEMIC WORK IN THAI UNIVERSITY

ACTIVITY	% RESPONDENTS								
	SUBSTANTIAL INCREASE			NO CHANGE			SUBSTANTIAL DECREASE		
	T&L Uni	Res Uni	%Diff	T&L Uni	Res Uni	%Diff	T&L Uni	Res Uni	%Diff
Teaching Classes	58.6	61.5	-5%	31.5	38.5	-18%	10.3	0	NA
Teaching Related:									
Activities	51.7	58.3	-11%	41.4	41.7	-1%	6.9	0	NA
Research/Scholarship	26.9	25.0	+8%	69.2	66.7	+4%	3.8	8.3	-54%
Administration	48.1	69.2	-31%	44.4	30.8	+44%	7.4	0	NA
Consultancy	35.7	30.8	+16%	60.7	69.2	-12%	3.6	0	NA
Public/Community:									
Service	21.4	30.8	-31%	67.9	53.8	+26%	10.7	15.4	-31%
Other Major Activities	35.7	33.3	+7%	57.1	50.0	+14%	7.1	16.7	-58%

TABLE 8: ACTIVITIES WITH MOST IMPACT ON CHANGING ACADEMIC WORK HOURS

ACTIVITY	% RESPONDENTS								
	INCREASED HOURS			DECREASED HOURS			NO CHANGE		
	T&L Uni	Res Uni	%Diff	T&L Uni	Res Uni	%Diff	T&L Uni	Res Uni	%Diff
Committee Work	75.0	66.7	+12%	7.1	8.3	-14%	17.9	16.7	+7%
Liaising with Administrators	57.1	66.7	-14%	7.1	16.7	-57%	35.7	16.7	114%
Providing academic support for students	53.6	41.7	+28%	10.7	16.7	-36%	35.7	33.3	+7%
Seeking funds to support academic work	15.8	16.7	-5%	10.5	16.7	-37%	73.7	58.3	+26%
Developing course materials for new technologies	54.2	58.3	-7%	12.5	8.3	+51%	33.3	25.0	+33%

Doing your own word processing	50.0	50.0	0%	10.0	8.3	+20%	40.0	25.0	+60%
Providing pastoral care for the students	55.2	83.3	-33%	3.4	0	NA	41.4	16.7	+118%
Marketing and promotional Activities	21.4	14.1	+52%	7.1	14.1	-50%	71.4	71.4	0%
Keeping up to date in your own field	78.6	80.0	-2%	10.7	10.0	+7%	10.7	10.0	+7%
Supervising casual and junior staff	50.0	30.0	+67%	0.0	10.0	NA	50.0	60.0	-17%
Designing and scanning in online materials	26.7	66.7	-60%	13.3	0	NA	60.0	33.3	+80%
Industry liaison	23.1	20.0	+15%	7.7	0	NA	69.2	80.0	-14%
Your own professional Development	71.4	41.7	+71%	7.1	8.3	-15%	21.4	50.0	-57%
International exchange Programs	46.2	55.6	-17%	7.7	0	NA	46.2	44.4	+4%
Offshore academic Work	37.5	50.0	-25%	12.5	0	NA	50.0	50.0	0%

CONCLUSIONS

The study has revealed convergence and divergence of academic staff viewpoints in the two Thai Universities. In the university with a research mission, academic staff expressed stronger interest in research and related activities vis-à-vis their counterparts from the university with a teaching and learning mission. Academics drawn from teaching and learning university had a stronger career interest in teaching than research in comparison to their colleagues from the more research-intensive university. These differences are also reflected in the relative academic workloads according to the activities undertaken. For instances, academic staff drawn from the research university expand nearly 41% greater effort on research/scholarship during teaching periods in comparison to their colleagues drawn from teaching and learning university.

The academic staff from the research-intensive university tend to have a greater commitment to their position within the university than faculty drawn from the teaching and learning institution. Could it be possible that teaching and learning universities are closer to industry and perhaps their staff have greater exposure and experience in industry and therefore seek career advancement through positions in industry? Alternatively perhaps academic staff drawn from research universities tends to focus their efforts on research and such a career can only be developed within universities and related organizations. These propositions will need to be tested by future research on this topic.

Academic staff from both types of universities appear agree completely on one particular area, namely, that they lack interest in administrative and related functions and activities. This suggests universities are burdening their academic staff on administrative and related tasks that do not really contribute to the principal mission of universities, that is, teaching and learning and research. Further, it may be false economy to use academic staff to undertake administrative duties that could well be delivered by lower paid administrative and clerical staff. Perhaps Thai Universities should consider making an adequate provision of administrative support staff to direct teaching and research areas of their institutions. This

should help to ease the burden on academic staff who can then focus greater attention on the core business of teaching and research.

Given that universities are labour-intensive industry, it is important for institutional researchers to devote greater attention on staff perception of their work and related issues. Such studies have great potential to assist higher education institutions in managing their human resources more effectively.

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