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CONTENTS

EDITORIAL

Thirteen refereed papers, covering a diversity of IR (Institutional Research) topics, were selected by the Editorial Board for publication in the first volume of JIRSEA. These papers had earlier been presented to the inaugural annual **SEAAIR (South East Asia Association for Institutional Research**) Conference on "Enhancing efficiency and effectiveness of tertiary education in the 21st century" held at Kuching, Sarawak from 22nd to 25th October 2001. Out of the thirteen papers, six were selected for this inaugural issue, which focused on three inter-related themes: *Efficiency and Effectiveness, Quality, and Entrepreneurship of Tertiary Education.*

In the area of efficiency and effectiveness based on Australian experience, Robert Carmichael proposed a good practice model for implementing educational efficiency and effectiveness. He also emphasized the importance of people consideration in evaluating efficiency and effectiveness. Peter Ling and Geoff Arger used 'depictograms' to compare case studies of the effectiveness of models of flexible provision of higher education in Australia. They suggested that universities should redesign their programs for flexible delivery in order to be educationally effective.

There were three papers on Quality. George Gordon's paper explored key issues and models of quality assurance with specific reference to the United Kingdom. He proposed that a multi-axial approach would assist in understanding and facilitating the implementation of quality assurance in tertiary education. Maimunah at al, using Universiti Teknologi Malaysia as a case study, found that total staff involvement was critical to ensuring quality assurance in teaching and learning based on ISO 9001 Quality System. On the other hand, Caroline Thangiah argued for student participation in quality management and proposed a cooperative model that evaluates instructional quality more comprehensively.

The last paper by Raj Sharma and Harch Thandi examined the entrepreneurship and commercialization of an Australian university's graduate school management programs. They found that the case study graduate school was successful in financing 95 per cent of its student load through local fee-paying students and international fee-paying activities.

The six refereed papers highlighted the responses and changes being undertaken in the tertiary education sector that are imposed by governments throughout the world as a consequence of globalisation and the rise of the k-economy. Globalisation, under the auspicious of the World Trade Organisation (WTO), brings down barriers to service exports and encourages world trade in commodities such as education. In particular, the General Agreement on Trade in Services (GATS) will free up the highly regulated education sector to international competition. This means that tertiary education institutions need to rethink their strategies and find new ways of managing their institutions more efficiently and effectively. Institutional research has a critical role in providing the relevant decision support to develop proactive strategies and action plans for enhancing the international competitiveness of tertiary education institutions and meeting the challenges of globalisation and the k-economy.

Editors: Dr Gan Che Ng and Dr Raj Sharma

Measures of Efficiency and Effectiveness as Indicators of Quality – A Systems Approach

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Abstract

The focus of this paper is to examine the systematic use of benchmarks for evaluating educational efficiency and effectiveness and a good practice model for system implementation.
Put in the simplest terms, 'Efficiency' is a measure of the work-rate of a process by which system inputs are turned into system outputs. 'Effectiveness' on the other hand is considered to be a measure of the 'quality' of the outcomes being achieved by the system.
This paper argues that effectiveness can really only be defined through the application of some qualitative 'fitness-for-purpose' criteria – and that together with some key efficiency measures, these indicators can be used as proxies for the measurement of quality.
The paper looks at work being done at Swinburne University of Technology Australia, which uses a combination of 'criterion reference' and 'quantitative' benchmarks to measure both efficiency and effectiveness, in a planned program of institutional self-review.

Definitions

With the exception of 'benchmarking' and 'system', these definitions are sourced from: AS/NZS ISO 9000:2000 - Quality management systems – Fundamentals & vocabulary, Standards Australia, December 2000, and from the Australian Universities Quality Agency (AUQA) Audit Manual – Dr David Woodhouse, Draft Edition, Version 0, July 2001.

Benchmarking
A process of assessing performance against some stated criteria or a known measure (benchmark). Benchmarks may be quantitative or qualitative.

Efficiency
The relationship between the results achieved and the resources used. Refers to the cost in relation to the outcomes achieved. It is rarely possible to describe in absolute terms. One process is 'more efficient' than another if it achieves the same outcomes at lower cost.

Effectiveness
The extent to which planned activities are realised and planned results achieved. A process is effective if its outcomes match the stated goals. Effectiveness is therefore similar to 'quality'.

Quality
The degree to which a set of "inherent" characteristics fulfils requirements. This is usually defined in a more shorthand way by the term 'fitness-for-purpose'.

Note 1 The term "quality" can be used with adjectives such as poor, good or excellent.
Note 2 "Inherent", as opposed to "assigned" means existing in something, especially as a permanent characteristic.

System
Is a set of related or interacting elements. But not just any aggregation of elements will do - a 'system' must be more than just the sum of the parts; and it must serve a purpose that is useful from a system user's point of view. This is why a good quality system is a feedback-controlled system.

Several years ago I was involved in a benchmarking project entitled: 'Benchmarking for Educational Effectiveness in VET' (Vocational Education and Training i.e. TAFE - Technical And Further Education).

We had completed the measurement part of the benchmarking by comparing various 'at-start' and 'at-finish' measurements of student satisfaction between different Electronics training providers. The results were very encouraging for my organisation. Not only did it indicate that overall student satisfaction with the quality of teaching was higher at Swinburne than our benchmarking partners, but our 'at-finish' performance improved, while that of our main competitor actually went backwards!

I took this as proof of us achieving greater educational effectiveness – 'quality'. When I proudly showed the benchmarking results to the then Director of the TAFE Division, he said, 'yes, that's all very well and good, but that's not how you measure quality – you measure it by looking at the module completion rate, because that is how we are funded.'

How could it be that we both had totally different definitions of what constituted quality?

It turned out that our TAFE Electronics teaching area had a much lower module completion rate (throughput) than our main competitor. It then struck me that what the Director called 'quality' was a measure of 'institutional efficiency', but what I had defined as 'quality' was really a measure of 'educational effectiveness'!

The language of quality is always slippery, and especially so in the area of its measurement and assessment. 'Efficiency' and 'Effectiveness' are commonly used as if they were completely interchangeable terms, and are often used as proxies for the more holistic concept of 'quality' - but that's not exactly how it should be either. If you haven't already done so, please read and reflect on the technical definitions of these terms at the start of this paper. It is perhaps self-evident that 'Efficiency' lends itself to quantitative measurement, while 'Effectiveness' requires the application of some qualitative criteria, but I will argue that evaluation of the holistic concept of 'quality' requires that we do both, and more.

In a paper presented to 'The End of Quality' seminar held at Birmingham, UK in May this year, a Swedish academic (Giertz 2001) made the observation that on 'quality', there were in fact:

'Three perspectives: (1) intrinsic quality, (2) extrinsic quality, and (3) politically correct quality (that) are related to the three groups of key stakeholders – the academic community, the market and the state. Each perspective has to be well defined and clearly described in order to reveal points of agreement and disagreement, thus providing a useful starting point for negotiations about a common platform for quality work.'

In other words, according to Giertz, what I was really interested in was 'intrinsic' quality, but what the TAFE Director was interested in was 'extrinsic' or even 'politically correct' quality.

The academic community, though mostly interested in 'intrinsic' quality, and less so in the others, sometimes find the contending concepts of 'Efficiency and 'Effectiveness' to be just as problematic. Take for example this comment by an Australian academic (Sawyer 2001):

'Because university performance indicators focus on throughput ratios there are significant incentives to graduate students in minimum time. Low failure rates are seen to represent efficiency rather than a decline in standards.'

So, according to Sawyer, a supposed measure of system efficiency, it is argued, may even mask what is really happening in terms of system effectiveness!

Can we ever hope of really coming fully to terms with these problematic concepts?

Put in the simplest terms, 'Efficiency' is a measure of the work-rate of a process by which system inputs are turned into system outputs (i.e. 'the relationship between the result achieved and the resources used'). 'Effectiveness' on the other hand is considered to be a measure of the 'quality' of the outcomes being achieved by the system, when quality is defined as 'the degree to which an inherent set of characteristics fulfils requirements' – or, is 'fit-for-purpose', (i.e. 'the extent to which planned activities are realised and planned results achieved.'). But I reckon quality has got even more to it than that.

For example, just as in a motor car, the fuel consumption (performance) figure is used as a proxy for 'engine efficiency' [i.e. fuel used (input) versus distance travelled (output)], in an educational system, an 'institutional efficiency' indicator would be the measurement of 'throughput' or 'student wastage.' IE a measure of attrition or non-completion - the 'student drop out rate', with enrolments as the input, against graduations as the output, giving (say) the 'module completion rate' as a purely quantitative measure of system efficiency!

But as important as it may be for judging a car engine's efficiency, such efficiency measures **by themselves** tell us nothing, or next to nothing, about the actual quality (inherent nature) of 'the journey', i.e. The 'journey' as planned, and as experienced by those involved. How much did the occupants 'enjoy' looking at the scenery on the way? What did the car's suspension 'ride' like? How 'comfortable' were the seats? How 'tired' or 'refreshed' they felt at journey's end? Etc. All the words in parenthesis are words about the concept of *'qualia'* – that is, of our direct experience, of our perception of the essential nature of things. It is this dimension that distinguishes the concept of 'quality' from mere performance measurement, and ensures that efficiency measures, no matter how useful they may be can only ever be proxy measures for quality.

After all, a car (or 'automobile') is really nothing more than a relatively simple system developed for the purpose of transporting people (a fitness-for-purpose definition). But the same basic principles apply when trying to measure the *'qualia'* of a student's 'educational journey' through the much more complex systems of a university or an educational system. But, complex systems create problems of their own for university managers and academics alike, as the following indicates (Harrington et al, 2001):

'Research indicates that systems with an order of complexity as small as just three elements, with two interconnections per element, can produce chaotic behaviour. In terms of product or organisation, this means unexpected behaviour, (good or bad), unintended consequences, and unpredictability.'

In the article, the authors go on to make the following insightful observation:

'Most managers today are singularly ill equipped to deal with complex systems, whether that system is the organisation or the products it produces. The root of the problem is the way we are trained to think about problems. Our basis for solving problems is reductionism and analysis. In other words we break the system down into smaller elements that can be easily analysed, rather than into a larger entity that cannot. There is a small problem with that approach: the very interrelationships and connections that make the system behave as a system are lost in the breaking down. You can analyse tyres, engines and transmissions forever and not come up with the system "automobile" or its emergent property of transportation. Without an overarching way of looking at the system, there is little possibility of understanding it'.

So, a systems view of quality is much more than just the drive to achieve certain outcomes at a lower cost. It is a complete way of thinking that invites us to consider the effects of complexity theory, the likelihood of chaos, and to even embrace the prospect of any 'unintended consequences' and 'unpredictability'. In some quality circles I know of, these ideas would be taken as heresy!

Evaluating 'educational effectiveness' therefore must involve the measurement of educational outcomes through the application of some stated '*qualia*' or quality criteria to give it a qualitative dimension. To identify the factors that caused students to discontinue their studies. To measure the level of graduate employment or further study resulting (ie. the level of 'positive' graduate outcomes); to measure student 'satisfaction' with the quality of the teaching that they experienced in their chosen course; or to ask how 'enjoyable' they found their experience of campus life to be.

What then would be a useful set of proxy measures to systematically evaluate an educational system's efficiency **and** its effectiveness - to try to measure the achievement of 'quality' as described above?

At Swinburne University of Technology Australia we have developed a systematic approach to reviewing quality on a 'whole-of-organisation' basis. In essence the Swinburne Quality Review System (SQRS) involves:

- Putting the review of quality into a strategic planning framework (see Attachment A)
- Developing a strategic quality review program (see Attachment B)
- Having a set of 20 (twenty) process standards, and 70 (seventy) quantitative and qualitative benchmarks for the measurement of quality (see Attachment C for a complete list of the benchmarks for each Process).

The majority of the SQRS benchmarks were drawn from 'Benchmarking – A manual for Australian universities', but some were produced locally following the 'McKinnon' model. McKinnon et al (2000) distinguished between two basic categories of benchmarks in Tables 1 and 2. There are three types of benchmark in each category: 'Lagging; 'Leading'; and 'Learning'.

Table 1 - 'Quantitative' – which distinguish normative and competitive levels of achievement by purely quantitative means. For example:

Process / Element	**Measure**	**Type of Benchmark**
Financial Management / External Debt	Ratio of annual principal & interest repayments to total annual revenue – a ratio of 5-10% is considered 'average' and below 5% considered 'good practice'.	'Lagging' – i.e. is a measure that tells us about past performance

These kinds of benchmarks are suitable for measuring institutional efficiency. 'Lagging' benchmarks tend to predominate in this category.

Table 2 - 'Criterion Reference' – which defines the attributes of good practice in a functional area, usually by combining a quantitative measure with a qualitative description - the specification of some criteria or a standard. For example:

Process / Element	**Measures**	**Type of Benchmark**
Quality Teaching / Student Satisfaction	A profile of course experience questionnaire scores in most fields of study equal to the average in each dimension, and reaching higher scores in some. Evidence of support and remedial action to improve low scores. Sub-set information extracted for international students and acted upon in international student program. ('Average')	'Learning' – ie is a measure of the rate of change of performance

These kinds of benchmarks are more suitable for measuring educational and administrative effectiveness. 'Leading' and 'Learning' benchmarks are particularly useful in this category.

Lindsay (1992) distinguished between two distinct approaches to quality:

- 'Production-measurement'; and
- 'Stakeholder-judgement'.

The 'production-measurement' approach treats quality as a synonym for 'performance' and discussion revolves around the definition and measurement of resources and outcomes (note the similarity to the definition of efficiency).

> '*Whatever variant of a systems model is employed, the notion of ''performance'' or ''quality'' that is employed usually relates to measures of those elements of the transformation of production process that can be readily quantified. Measures may be simple magnitudes such as ''the numbers of graduates'' or complex indicators such as completion rates, student staff ratios, or publications per staff member.*'

The 'stakeholder-judgement' approach on the other hand involves a more holistic concept of quality, with different and sometimes competing discourses, and with a variety of different stakeholders involved in the making of judgements about quality – about what actually constitutes 'poor', 'good', or 'excellent'. These characteristics lead Lindsay to conclude:

> *'In this approach any equating of simple quantitative measures with quality is rejected and instead, reliance is placed on a wide variety of measures and in reaching **global assessments** from a diverse array of information, both quantitative and non-quantitative'.*

Lindsay goes on to disparage the value of us using simple 'systems models' in higher education because they usually involve using the 'production-measurement' or 'quantitative' approach. But, remember a characteristic of 'a system' (and especially a complex one) is that it is more than just the sum of the parts, and that it must serve some good purpose from the user perspective.

So, what if '*the system*' itself is based on the very same principles as Lindsay's 'stakeholder-judgement' approach to quality, and to use Lindsay's own words, uses '*a wide variety of measures to reach **global assessments** from a diverse array of information, both quantitative and non-quantitative*'

(i.e. qualitative)? I would argue that even at the risk of introducing an element of system complexity into the approach, such a 'systems approach' is infinitely superior to any that misses the most important point about what quality really is – the search for the essential ('inherent') character of things. In the interestingly titled work 'The Case Against ISO 9000' Seddon (2000) makes the following insightful observations about the importance of managers adopting a systems perspective:

'People's behaviour is governed by the system they work in. In turn, the system is governed by the prevailing management thinking. Interestingly, this helps us understand why so many programs of change fail. When they fail it is generally because the attempt was non-systemic -–there was no change to the system and, by implication, no change to management thinking.'
And
'A system is a whole made up of the parts. Each part can affect the way the other parts work and the way all parts work together will determine how well the system works.'
And
'A systems view of an organisation starts from the outside-in. How does the organisation look to its customers? How easy is it to do business with? The focus is: how well does the system respond to the demands made on it by its customers?'
And, finally

'Improvement begins with understanding the organisation as a system.'

A Good Practice Model for Continuous Improvement of Quality

Consistent with the description of a qualitative approach, I will close the paper with a brief description of the main features of a good practice 'systems' model. It's one that uses a combination of quantitative measures and qualitative information to try to capture both institutional efficiency and educational effectiveness in a systematic manner.

The SQRS approach to continuous organisational improvement is characterised by the following features:

1. *Alignment of the review of quality with the organisation's strategic mission* through its 'five strategic themes.' Each theme has a 'Strategic Driver' who is responsible for the selection of relevant processes for review. The strategic themes and their drivers follow:

    - The Entrepreneurial University – Vice-Chancellor & Deputy Vice-Chancellor;
    - The Research Intensive University – Pro Vice-Chancellor, Research;
    - Globalisation – Vice-President;
    - Flexible Learning & Teaching – Deputy Vice-Chancellor, Learning & Teaching;
    - The Intersectoral Advantage – Chair of the Intersectoral Advisory Committee. (a sub-committee of the University's Joint Planning Committee).

2. *Integration of the review of quality with the University's developing Foresight & Planning & Performance Reporting processes.* Together with 1 above, this encourages a more 'global assessment' of the University's organisational performance.

    See Appendices A and B for diagrammatic representations, and note 3 below.

3. *Seeing the organization as 'a system', and having a 'process-based' approach to the review of quality*, relying on Self-Assessments by designated 'Process Owners', using a combination of quantitative and qualitative criteria and measures for each of the 20 Processes that comprise 'the organization as system', and validation of self-assessment outcomes. The value of having a 'process-based' approach to quality improvement is explained in the following excerpt from the AUQA Audit Manual (2001):

'In order to check its own policies, procedures and practices, to learn whether it is achieving its objectives, and to determine how to improve its performance, an institution or agency must have in place appropriate measures and indicators of both quantitative and qualitative form. Measurements give information about individual items (i.e. 'elements'*), but also about processes. The process information is often more important because individual item information is about the past and present, whereas it is the process information that provides indications for the future. For this reason AUQA emphasises process-based audit, with outcomes providing information on the effectiveness of the processes'*.

See Appendices B & C for details.

4. *Harmonisation of the in-house quality review program for continuous improvement, and 'self-review'* - as required for external audit by the Australian Universities Quality Agency (AUQA) for validation.

To conclude on this note, here is another statement drawn from the AUQA Audit Manual (2001):

'A self-review is not an end in itself, but a means to an end, namely that of improving the institution. The Australian Quality Awards Criteria recognize this by explicitly including improvement as one of the four steps in self-assessment (Approach, Deployment, Results, Improvement: Australian Quality Council, 1998). Even when the proximate reason is preparation for external review, more comprehensive internal improvement can flow from it if explicit attention is paid to implementing the recommendations for improvement that arise from the self-review.

Furthermore, the self-review process is likely to be a learning activity for members of the committee and other members of the institution, resulting in a broader understanding of the institution's activities in, and the environment for, the subject for the review. It is a common observation of those involved in planning that its main value results from the insights participants gained during the process, rather than from the documents produced. A self-review often reveals significant ignorance or differences in interpretation within the institution. If this occurs, discussing such differences and reaching a workable synthesis of views is an invaluable outcome of the self-review as an enhancement ''side-effect'', regardless of the main purpose'.

So, even within the strict 'fitness-for-purpose' definition of quality adopted by the AUQA, it appears that there is still some room for 'unintended consequences' and 'unpredictability' – and for serendipity (that is 'the faculty of making fortunate discoveries by accident' – Oxford Concise Dictionary). Sometimes when on a journey, a tangential view through a side window is much more interesting than just staring at the road ahead or constantly peering at the fuel gauge. But, if the driver takes their eyes off the road for too long, they are asking for trouble. Or if they run out of fuel, they won't reach journey's end either. Pity the poor passengers!

Finally, another of the characteristics of systems is that they are emergent. It is emergent properties that give a system life, and it is the character of the elements, and their interrelationships that give rise to emergent properties (Harrington et al). To get the most out of the quality process in our organiations, and to make the most of any 'fortunate mistakes' that we are bound to make in designing, developing, and operating our systems, we still need to tackle quality in a systematic way. But one that allows for, and indeed even embraces the human side of quality – after all, on our journey we are dealing with people - not cars.

References

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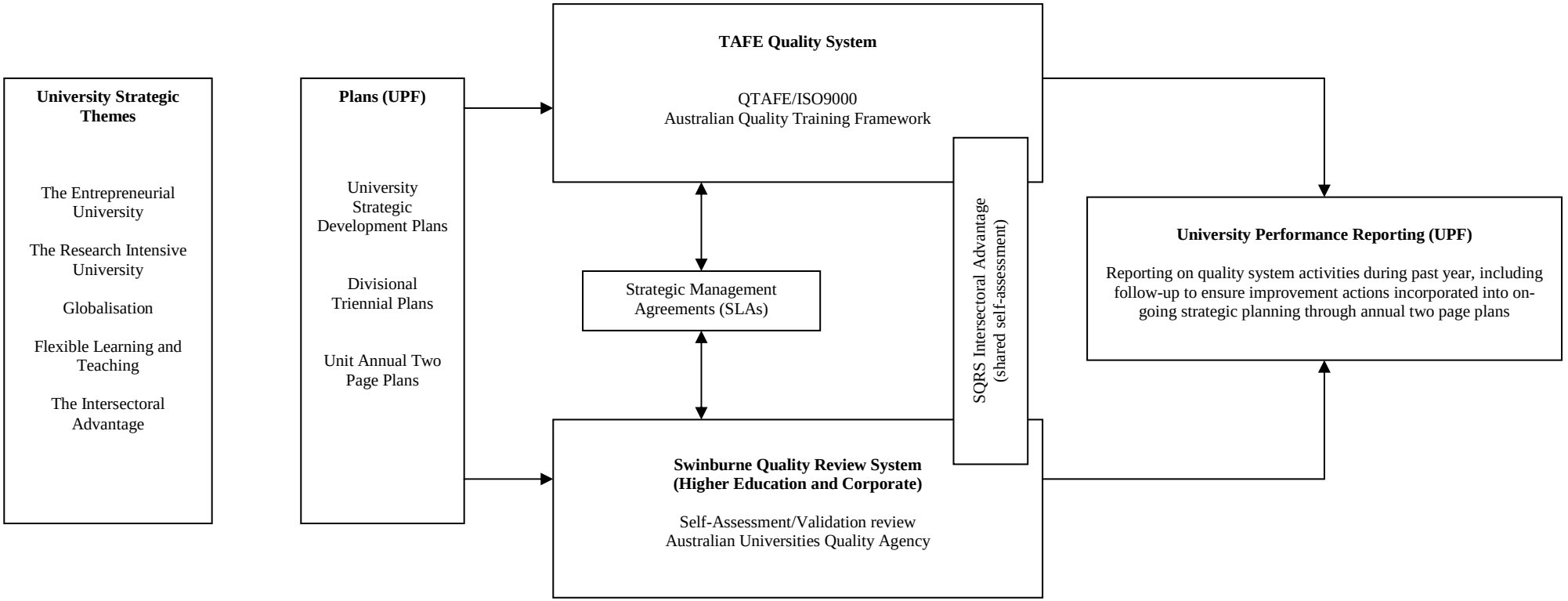
Swinburne Quality Review System © Swinburne University of Technology, July 2001

Appendix A

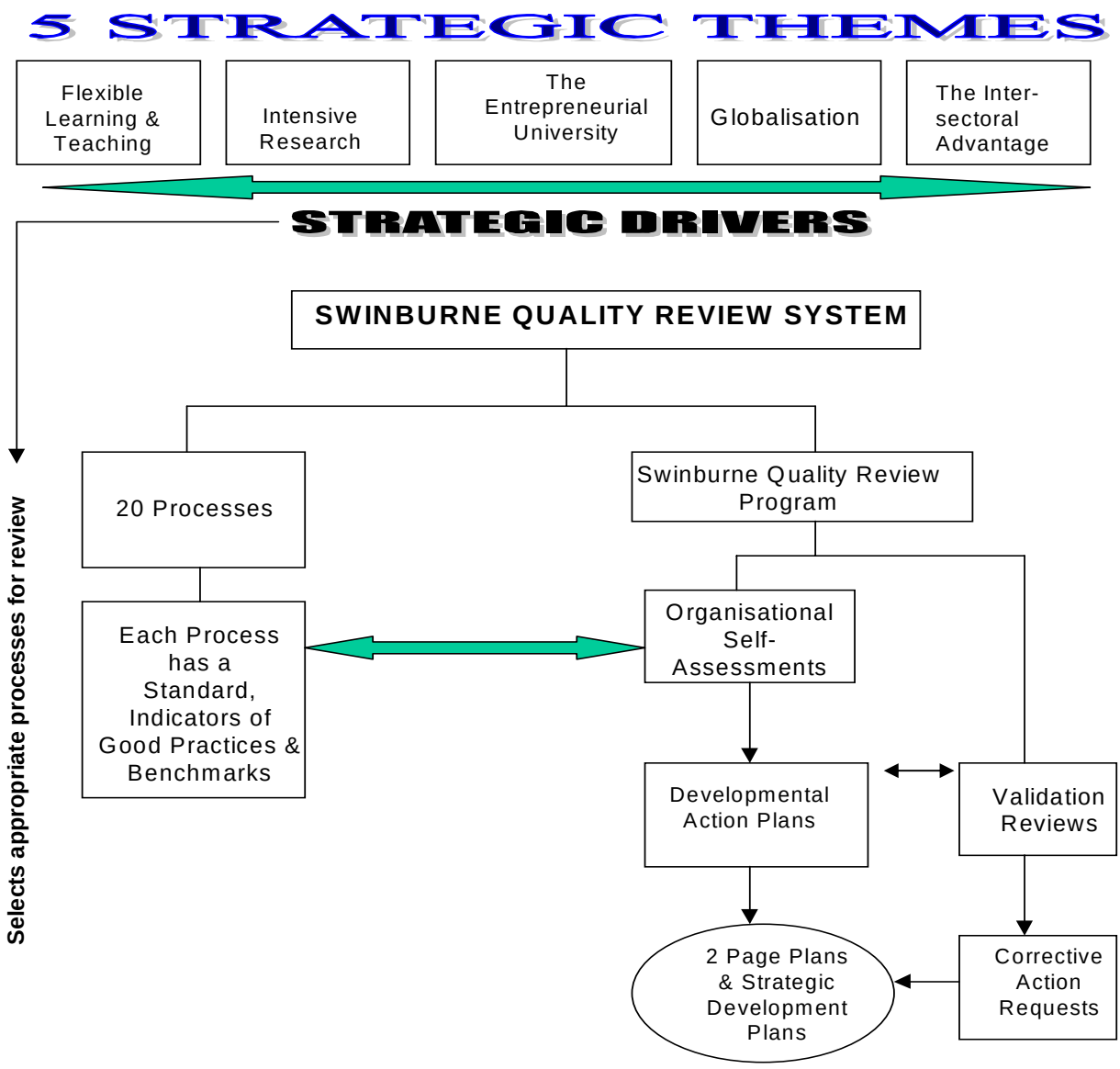
Swinburne University of Technology
Quality Systems Integration with University Planning Framework (UPF)



UPF: University Planning Framework

Appendix B

Diagram of Swinburne Quality Review System



How does the SQRS work?

A Standard, Indicators of the good practices required and Benchmarks are built into each of the above twenty processes. These form the criteria of assessment on the performance of these processes. The Swinburne Quality Review Program is the 'implementation' part of the **SQRS**. The program was developed to ensure that the University achieves improvement on those core business processes in the **SQRS**. The Swinburne Quality Review Program comprises of Organisational Self-Assessment and Validation Reviews.

Appendix C: SQRS Processes & Benchmarks

	#1.	#2.	#3.	#4.	#5 + >5. (see note*)
1 Program Planning & Design	*L&T Plan*	Course establishment process	Course Goals & Standards	*Fitness of courses*	*Contribution.* Academic review process*
2 Guidance & Support of Learners	L&T Plan	STUDENT PROGRESS UNITS	Effectiveness of services	1st to 2nd year retention trends	*Customer service*
3 Quality Teaching	L&T Plan	Scholarly Teaching	Teaching Environment	Student Satisfaction	Academic review process*
4 Assessment	Fitness of courses	*Timely feedback*	Judge progress	Student Progress Units	Appropriate Assessment*
5 Research Development	Research management plans	*Research & teaching staff*	Provision of research support	Research income trends	Publications. Impact of research*
6 Research Training	Research students' experience	PROVISION OF SUPPORT FOR RESEARCH	Research higher degree completion	*Customer service*	
7 Strategic Management	Governance & leadership	Planning	*Core business systems*	*Strategic change initiatives*	*Customer service*
8 External Impact	Reputation	Strategic community service	Competitive-ness	Customer service	
9 Internationalisation	International. strategy	Management of off-shore delivery	FINANCING OF INTERNATIONAL STUDENT PROGRAM	*Overseas links and activity*	International Culture*
10 Continuous Quality Improvement	*CQI performance index*	*Customer service*			
11 Staffing	Strategic HR planning	Management of workforce	Organisational climate	*Customer Service*	
12 Staff Development	Career dev. performance index	*Customer service*			

Equity - **Staff & Students**	Equity planning	Equity planning implementation	*Customer service*		
14 Health & Safety - Staff & Students	Strategic HR planning	*Exemplary community practices*	Risk management	*Customer service*	
15 Financial Management	Risk management	Operating result	*Liquidity ratio*	External debt	Commercial. Strategic asset management*
16 Premises & Physical Infrastructure	Recurrent maintenance funding	Facilities maintenance backlog	*Space management*	Central teaching space usage & effect	*Customer service*
17 Information Technology & Telecommunications	Large equipment utilisation	Corporate information systems	IT&T infrastructure	Contributions to teaching & learning	*Collaboration* Core systems Risk mgt*
18 Information Resources	Effectiveness of information plans	Contributions to teaching	Support for research	Collaboration	Customer service
19 Student Administration	Core business Systems	Student administration services	*Organisational climate*	*Customer service*	
20 Inter-sectoral Development	*INTERSECTORAL PERFORMANCE index*	Customer service			

'Customer Service' is a generic benchmark. If five or more benchmarks are listed for a particular process, then 'Customer Service' is to be added to the list for that particular process (these are marked). Locally developed benchmarks are in itallics all others are from McKinnon et al, Benchmarking - A Manual for Australian universities.

The Effectiveness of Flexible Provision of Higher Education in Australia

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Abstract

This paper reports on an investigation of the effectiveness of models of flexible provision of higher education in Australia. The study was commissioned by the Australian Department of Education, Training and Youth Affairs. In this study flexible provision is defined in terms of providing choice for learners because this is expressed or implied by educational providers in using the adjective 'flexible'.
The methodological challenge faced in this study was how to address hard-edged research questions in the context of a variety understandings of key terms, the individuality of the approaches taken by providers, and a want of agreed measures of effectiveness. In response the investigation employed case studies researched and described around a set framework of topics and evaluated against criteria for flexibility, effectiveness and cost effectiveness. A summary of each case was depicted graphically. The depictions – referred to as 'depictograms' – provided a means to readily compare the cases.

Focus

There is a widely held view in Australia and elsewhere, that the providers of higher education need to devise much more flexible ways of reaching students (see for example The Web-Based Education Commission, 2000).

This paper reports on an investigation of the effectiveness of models of flexible provision of higher education in Australia. The study grew out of a concern about the effectiveness of flexible provision initiatives in affording study choices to students, particularly those in non-metropolitan regions of Australia. The cases chosen for close investigation were ones that provide for students in non-metropolitan regions.

The research questions were framed as:

- Are differing models of flexible provision of higher education apparent in Australia?
- Are models identified effective in the provision of higher education?

The latter question includes the concept of cost effectiveness.

Purpose of the paper

This paper describes the methodology employed in the study, addresses current understanding of the issues, depicts the findings and summarises the conclusions and recommendations arising from the study.

Key concepts

The notion of flexible provision is not defined in any agreed way in the research literature – in fact a variety of terms is used such as 'flexible delivery' and 'flexible learning' – nor is there a single, commonly adopted approach to it in practice. According to Kilpatrick (1997), any agreed definition of the flexible provision of higher education remains problematic because there is no universal model of it, and the related terms are used in various ways. Flexible provision may refer to the opening of choices to learners through the use of technologies and/or policies. Williams (1995), in discussing flexible delivery, refers to removing structural barriers such as entry, and literacy and language requirements, overcoming physical and other access issues, such as work and family commitments by providing access to appropriate learning environments.

Flexible provision of higher education is defined here as provision which offers choice to students in regard to several of the following matters: content and assessment; place, time and pace of study; entry and exit arrangements; style of learning; and working individually or collaboratively. Flexible provision of higher education may be afforded through the employment of various strategies including the use of learning and teaching techniques and technologies such as CD-ROM, online materials, online communications, print materials, face-to-face tuition, distributed face-to-face sessions, TV and radio, video-on-demand, videotape/audiotape, video-conferencing, and teleconferencing. The term 'the flexible provision of higher education' also refers to the policies that are designed to provide flexibility such as: open entry; recognition of prior learning; credit transfer arrangements; articulated and embedded awards; content choices within programs; multi-modal provision of education; and negotiated assessment.

Effectiveness here refers to producing the intended or expected result. The results expected in this research are dealt with in two ways: those which the providers declared were their intentions in making flexible provision; and a set of expectations which arose from conventional wisdom as indicated by the literature and an initial survey of Australian higher education providers.

In terms of intent, Kilpatrick (1997) notes that, as with open learning, there are several different discourses about the flexible provision of higher education. These include learning with technology and increased equity and access. When it comes to flexible provision there are also discourses related to the means by which institutions can achieve a competitive edge and increase efficiency and accountability. As Shapiro (1993) commented, these discourses arise from the way higher education is being transformed by increased use of new technologies, limits to public funding, demands for greater public accountability, increased competition, and the challenges associated with dealing with the needs of a quasi-mass, as distinct from a quasi-elite, system. In the present study responses to an initial survey of universities indicated a range of intentions in adopting flexible provision.

Aside from intent of providers, the indicators of effectiveness employed were: access, including regional access; valued learning outcomes; student satisfaction; staff satisfaction; satisfactory student retention/completion rates; and cost effectiveness.

Cost effectiveness could be regarded as efficiency, that is, the attainment of intended or expected outcomes with limited demand on resources. In the present study cost effective provision was defined as provision which rated well against the flexibility and effectiveness indicators listed above and made limited demands on a range of resources, namely: infrastructure; direct operating costs; support services; and academic staff time [note that these categories are not mutually exclusive]. Cost effectiveness in this study is indicated by high effectiveness and low unit costliness. Unit costliness may be lessened where the scale of operation is increased. The scale of operation then is a consideration in assessing cost effectiveness.

Research approach

Research genre

The research genre adopted was interpretative. Neither universities nor programs can be sorted into simple flexible and non-flexible categories. Each case is peculiar. In view of this the identification of variables associated with effective flexible provision of higher education was not attempted, rather, the investigation involved the identification and description of cases of flexible provision of higher education. The descriptions utilise both qualitative and quantitative data. The quantitative elements were employed descriptively rather than inferentially.

Initial survey – models of flexible provision of higher education in Australia

Each university in Australia was provided with the definitions employed in the study and a rudimentary conceptual schema and was invited to indicate policies of the university directed at flexible provision of higher education. For each policy they were requested to provide a rationale and an example or examples of practice. All universities responded.

Three major themes emerged from the data. Many universities defined flexible provision of higher education in terms of offering choices to learners. Of these there were universities who understood flexibility to be directed at access. There were other universities who understood flexibility as being about accommodating a range of learning needs and preferences. The third common response referred to the use of new learning technologies to address the quality of learning as well as providing new options for learners.

The survey of universities indicated a wide range of approaches to the flexible provision of higher education. In fact for many universities several approaches co-existed. For the purposes of this study two broad categories and six strategies of flexible provision of higher education have been distinguished on the basis of literature and responses to the survey.

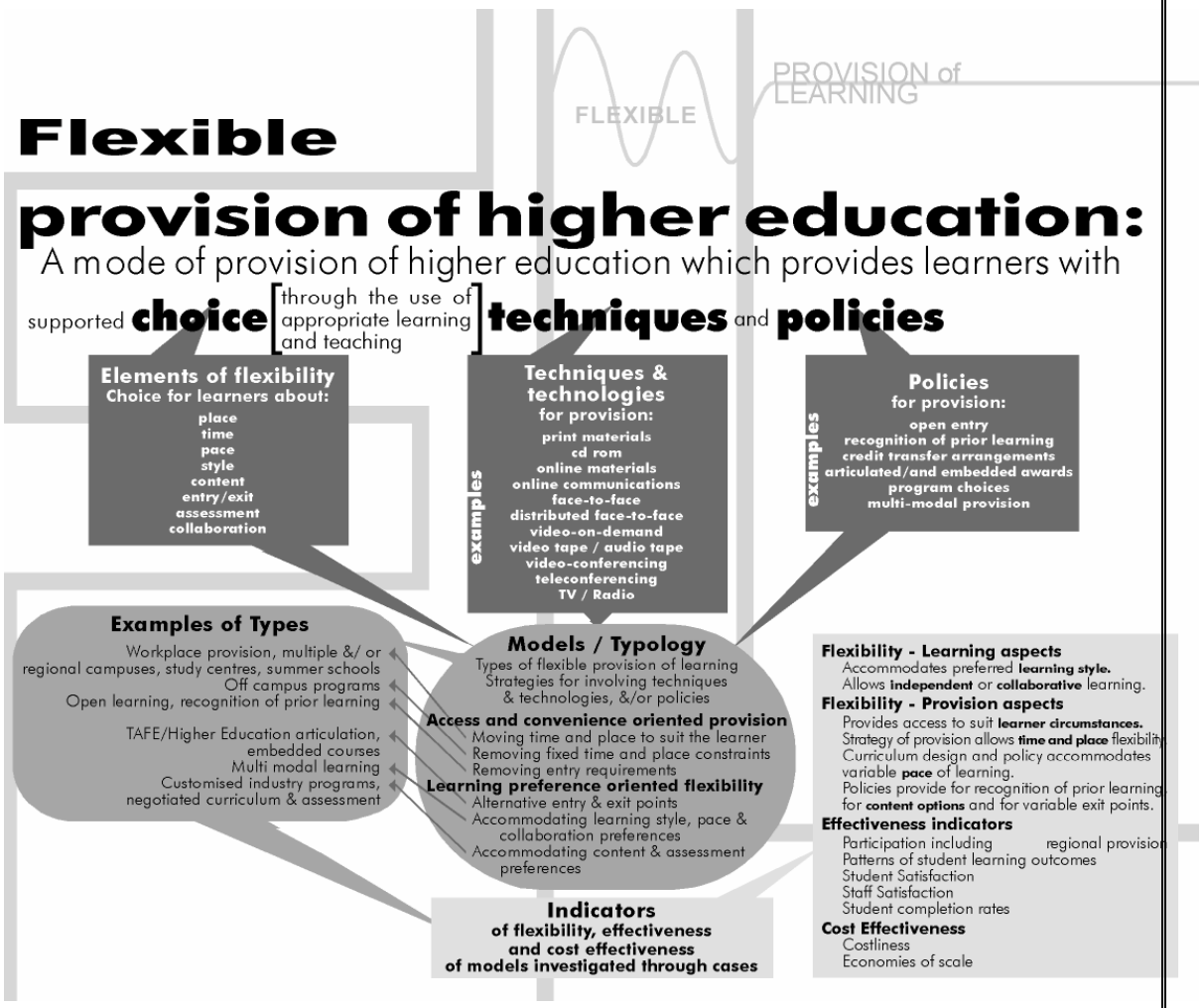
1. Provision Affording Access and Convenience:
    - Moving time and place of study to suit the learner
    - Removing fixed time and place constraints
    - Removing entry requirements

2. Provision accommodating learning preferences:
    - Providing alternative entry and exit points
    - Accommodating learning style, pace and collaborative learning preferences
    - Accommodating content and assessment preferences

Research schema

These broad categories and strategies provide a typology of flexible provision of higher education in Australia and a basis for the selection and analysis of cases (see Figure 1).

Figure 1: Effectiveness of Flexible Provision – Research Schema



Literature and current understandings in relation to the schema

Choices offered to learners

When institutions pursue polices and practices designed to provide higher education programs more flexibly a key intention is to give students, and for that matter lecturers, choice about the place, pace, timing, style, and other aspects of their learning. A National Board of Employment, Education and Training report (1997) found that resource-based learning could offer customised higher education programs, accommodate individual learning styles and individual learning goals and provide time and place convenience for both staff and students.

The use of technologies in the provision of higher education is sometime identified with flexible provision and offering choice. For example, in the present study several universities responded to requests for information about policies on flexible provision with policies about online provision. However, in a yearlong study of a project designed to flexibly provide courses across Europe via television, video conferencing, e-mail, computer conferencing and access to the web, Collis (1996)

discovered that students were offered minimal choice despite the use of technologies. There were several reasons for this, including the time constraints that course developers experienced. Those lecturers wanting to build choice into their offerings, were not given sufficient time to do so. Several lecturers' thought that their university required them to use traditional approaches to teaching and learning that did not provide choices for the students. It also seems that providing choice is perceived as being costly. Collis (1996) notes that the ability to construct inventive courses that do give students choice was largely 'outside the scope of most course providers.' Green (1999) made a similar observation.

Diaz and Cartnel (1999), on the other hand, suggest that preferred learning style can be accommodated through the use of flexible learning strategies. His work shows that learning style may influence the choices students make. Independent learners, it seems, may choose online courses while dependent learners choose on-campus courses. Online learners may be driven by intrinsic motivation, preferring independent learning. Where courses offer flexibility about individual or collaborative study, there is some evidence that courses promote collaborative learning (Landis and Wainwright, 1996).

Access

Flexible provision includes the use of a range self-paced, resource-based and technology enhanced forms of tuition to address access and equity issues. A range of learning venues (for example workplace, home, learning centre) may be utilised, together or separately, to meet the needs of those learners under-represented in higher education, including those in non-metropolitan regions.

Stevenson, Maclahan and Karmel (1999) addressed the issue of physical location as a factor in people's participation in higher education in Australia, in an examination of the variation in participation and provision across regions. They found that 'tertiary education participation rates are very much higher in metropolitan regions than in non-metropolitan regions [and that] inequality across metropolitan regions is almost as important as the inequality between metropolitan and non-metropolitan regions'. They concluded that both proximity to university facilities and 'factors other than distance to university' play an important role in university participation.

Much of the literature in this area is concerned with equity issues. The National Board of Employment, Education and Training report on resource-based learning (1997) found that while resource-based learning offers time and place flexibility there is a possibility that financially disadvantaged groups might be further disadvantaged.

Student learning outcomes

Much of the research relating to the impact of flexibly delivered courses on student learning has a techno-centric orientation. That is, the studies often assume that the technology is the vital part of making flexible provision for learning. Insofar as it does involve technology, a meta-study of research projects on computer-based learning undertaken by Kulik and Kulik (1991) is pertinent. It found that there was no significant difference between learning outcomes attained by traditional approaches and computer-based approaches. Billings (1994), focusing on distance education, likewise discovered that there was no significant difference in learning outcomes between distance education courses and on-campus courses. Leasure's (2000) findings support this.

Rodrigues' study (1999) shows that flexible provision, involving both face-to-face and online discussions, is strengthened when 'face-to-face sessions are used to enable camaraderie to

develop and continue in online discussions.' When the flexible provision of learning is thought of more in terms of self-managed learning, collaborative learning, cognitive apprenticeship and the like another view of its impact on learning outcomes emerges. Ryan, Carlton and Ali (1999) found that students participating in web-based courses develop improved critical thinking skills and creativity. Clark's (1998) study shows that there is parenthetic, additional learning that is developed, especially computer competency, when students undertake web-based courses. Ribbons (1998) also found improved higher order thinking skills and online team building and collaboration when students learn online. Bilge's (1999) study suggests that 'collateral learning' occurs when students experience the flexible provision of higher education. He observed the way learning became more self-directed and the students developed improved lifelong learning skills.

The Web-Based Education Commission of the U.S.A. (2000) refers to the promise of the internet to provide learning centred around students rather than classrooms, to focus on individual learners and to make lifelong learning a possibility Diekelman's study (2000) shows that technology-based distance education can encourage the teacher to reconsider, and improve upon traditional pedagogy; notwithstanding that it can be daunting for teachers to have to do so. Others refer to the way web-based courses usually enable quicker and richer feedback to students based upon a greater array of assessment techniques (Misko, 1994).

On the other hand, Ward's study (1998) found that students' use of Web materials is tied to their conceptions of traditional higher education. They explore little; rather they use the web as a carrier of materials. In effect, the web becomes little more than a 'page-turner' for them. George and Luke's (1996) study throws doubt on whether students have the necessary levels of information literacy to enable them to effectively engage flexible learning.

Commentators note the tensions that exist between learner needs and certain techniques that are used to more flexibly provide higher education. Ferguson (1998) for example, points out the difficulties that exist for engineers doing required laboratory experiments online. Some science faculty feel that laboratory work cannot be taught online or at a distance. Feenberg (1999) also points out that appropriate pedagogy has still to be worked out for the flexible provision of higher education. Currently the old pedagogy of the lecture still dominates.

Student satisfaction

In some cases, flexibility in the timing of the learning has been found to have appeal to students. Cragg (1994), for instance, found that registered nurses in a post-registration nurses baccalaureate program found 'time shifting', the ability to participate in learning activities at the learner's convenience, to be a major advantage of a computer-mediated conference course.

However, there are many studies that highlight the frustration experienced by students in web-based courses regarding the difficulty of accessing web-based materials and technical problems. Moreover, videoconferencing to give lectures, when used on its own, has been shown to be unappealing to students (Feenberg, 1999). Some studies indicate that students often feel isolated in flexibly delivered courses (for example Cragg, 1994).

Staff satisfaction

Flexible provision of higher education can offer time and place flexibility to staff as well students. However, developing online courses, and teaching online, are frequently not yet in the criteria for staff promotion and may not even be counted in workload. There is often an increased workload when distance education strategies are used (Billings, et al. 1994).

Student participation

The provision of higher education in flexible forms is increasing rapidly and the growth can be expected to continue. The Web-Based Education Commission (2000) notes a growing use in the U.S.A. of online content and tools in traditional courses with 40 percent of colleges using Internet resources (compared with 15 percent in 1996) and 59 percent using electronic communications for tuition purposes (compared with 20 percent in 1995). Off-campus use of online delivery is also growing rapidly in the U.S.A. with 84 percent of four-year colleges expected to offer distance learning courses by 2002 (compared with 62 percent in 1998) and 2.2 millions students expected to enrol in distance education courses by 2002 (compared with .7 million in 1998).

There has been a large increase in the demand for places in higher education in Australia as elsewhere over the last fifteen years. Cameron (1998) considers flexible learning to be an important means of meeting the demands of 'credential creep'. Flexible provision of higher education is in part designed to meet a continuing increase in demand, including demand from people with work and domestic commitments and people in non-metropolitan regions.

The intent of institutions in providing higher education more flexibly

There is literature that addresses the motive of institutions in developing policies directed towards the flexible provision of higher education. Evans (1999) notes that flexible provision is a way former regional Colleges of Advanced Education maintain a position in the current competitive arena of higher education. They do this by converting existing on-campus courses into dual mode operations, which incidentally produce economies of scale.

In a case study of one Australian higher education institution, Kirkpatrick (1997) discovered that there were four main reasons advanced within the institution for pursuing more flexible approaches to learning and teaching. They were:

- Developing niche markets both with local students and with overseas students.
- Being more equitable by enabling greater participation in higher education by traditionally under represented groups.
- Becoming more efficient, especially in terms of 'provision' capacity.
- Exploiting new knowledge technologies that enable mass education, usually at a distance.

There are multiple reasons for increasing flexible provision of learning. Inglis, Ling and Joosten (1999) suggest institutions adopt digital approaches to delivery of education because, compared with traditional distance education, it is faster, cheaper and better in terms of presentation of the learning materials, support provided to students, and interaction that is possible between teacher and student and amongst the students themselves.

It is clear that there are more agendas for the flexible provision of higher education than simply improving the quality of student learning per se or otherwise catering for the needs and preferences of learners. Investigating the motives for institutions attempting to provide higher education more flexibly is an element of the present study.

Cost effectiveness

The matter of the cost-effectiveness of the strategies for the flexible provision of learning is complex. Some studies examine the cost effectiveness issue in terms of comparable learning outcomes. Whittington's (1987) meta-analysis of over a hundred studies related to distance education identified that, regardless of the distance education provision system, students receive a

comparable education. The systems provided, however, can be more or less costly with small scale, multimedia-intensive provision being at the high cost end.

Inglis, Ling and Joosten (1999) argue that cost effectiveness needs to be examined from the viewpoint of investment and economies of scale. Their work shows that an increase in student numbers in a resource-based course from less than a hundred to several hundred can result in substantial economies of scale but that the economic advantage of increased scale tapers off. The major costs in flexible provision are:

- Infrastructure costs
- Materials development costs
- The costs of communicative interaction with students

The Web-Based Education Commission (2000) points to infrastructure and development costs associated with online provision. They suggest that 'technology is expensive and web-based learning is no exception'. Development of online courses can take anything from 66 percent to 500 percent longer than creating traditional courses. When it comes to flexible provision of higher education, the provision may involve multiple modes of tuition, including face-to-face tuition. The Web-Based Education Commission observes that: '… if technology is used as an add-on to existing activities, rather than as a means to reshape education, then it will simply add to the total cost of operations and few savings will be realised' (Web-Based Education Commission, 2000).

Taylor (1999) notes that models of distance education have moved from a first generation of printed correspondence courses, through multimedia and telelearning, to a fourth generation of flexible learning that involves Internet based access, interactive multimedia and computer mediated communication. This format involves each of the costly components of infrastructure, materials development and communicative interaction. Taylor has proposed a fifth generation that develops elaborate databases of responses to student communications thus automating elements of the communicative function and containing costs.

Case study methodology

Case studies

The effectiveness of models of flexible provision of higher education was explored in the present investigation through case studies. The case study reports constitute descriptions of the context of the case, policies relevant to the case, practices, student participation, learning outcomes and cost effectiveness.

Ten cases were selected. The ten cases cover the notional models of flexible provision identified in the initial survey of universities. The cases, however, do not match the notional models. Most span two or three models. In selecting the cases a focus on provision for non-metropolitan regions was a factor.

Data Presentation

The methodological challenge faced in this study was how to address hard-edged research questions in the context of a variety understandings of key terms, the idiosyncratic practices of providers, and a want of agreed measures of effectiveness. In response the investigation employed case studies researched and described around a set framework of topics and evaluated against criteria for flexibility, effectiveness, and cost effectiveness.

A summary of each case was depicted graphically against these criteria in a standard form. The depictions are referred to as 'depictograms.' A depictogram is a tool for providing a graphic summary of an interpretation of data derived from descriptive case studies. It uses shaded bars located by agreement between two or more researchers and descriptors typical of the qualitative data relating to each case. The format, using data typical of the cases, is illustrated in Figure 2. A separate depictogram was drafted for each case study allowing cases and elements of each case to be compared.

Each case is plotted by two or more researchers against criteria for flexibility, effectiveness and costliness using shading and descriptors drawn from qualitative and/or quantitative data.

The findings from the individual case studies were agglomerated graphically in the conclusion to the present study to give an overall picture of the flexibility, effectiveness and cost effectiveness of the cases investigated.

Findings

The effectiveness of models for flexible provision of higher education

As a descriptive/interpretative approach is taken and as each case differs substantially from other cases, it is not appropriate to make generalised conclusions. Nevertheless the case finding can be said to indicates that:

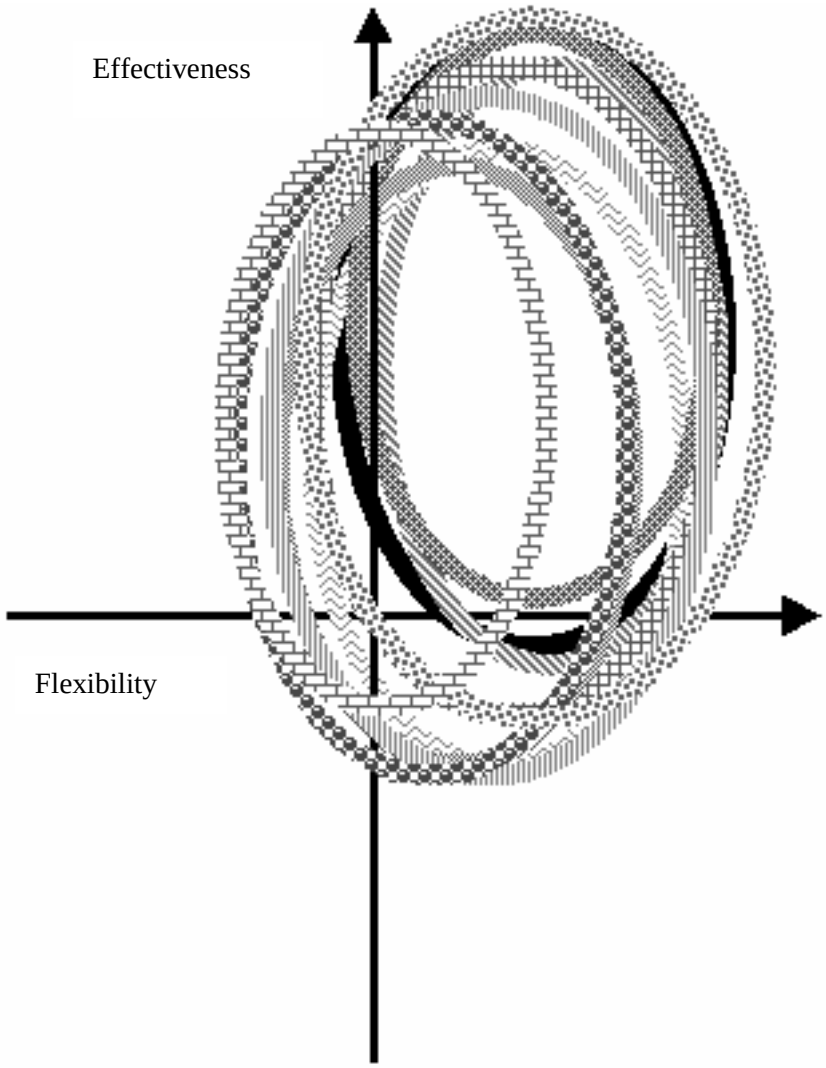
- The cases of flexible provision of higher education investigated were indeed flexible – that is they offered choices to students
- The cases could be classed as effective against the criteria of effectiveness adopted for the study as well as in terms of the intent of the universities in offering flexible arrangements.

The findings are represented in summary in Figure 3. In the summary graph each case is represented on the axes according to the range of flexibility and the range of effectiveness indicated in the depictogram of the case. The idea of the summary graph is to give an overall impression of the findings of the study with regard to the flexibility and effectiveness of models of flexible provision.

Figure 2: Depictogram example (simulated)

Figure 3: The flexibility and effectiveness of models of flexible provision of Higher Education

Each ellipse represents one case. The ellipse is plotted against the Effectiveness and the Flexibility axes according to the charting of the case on its depictogram (see Figure 2).



The cost effectiveness of models for flexible provision of higher education

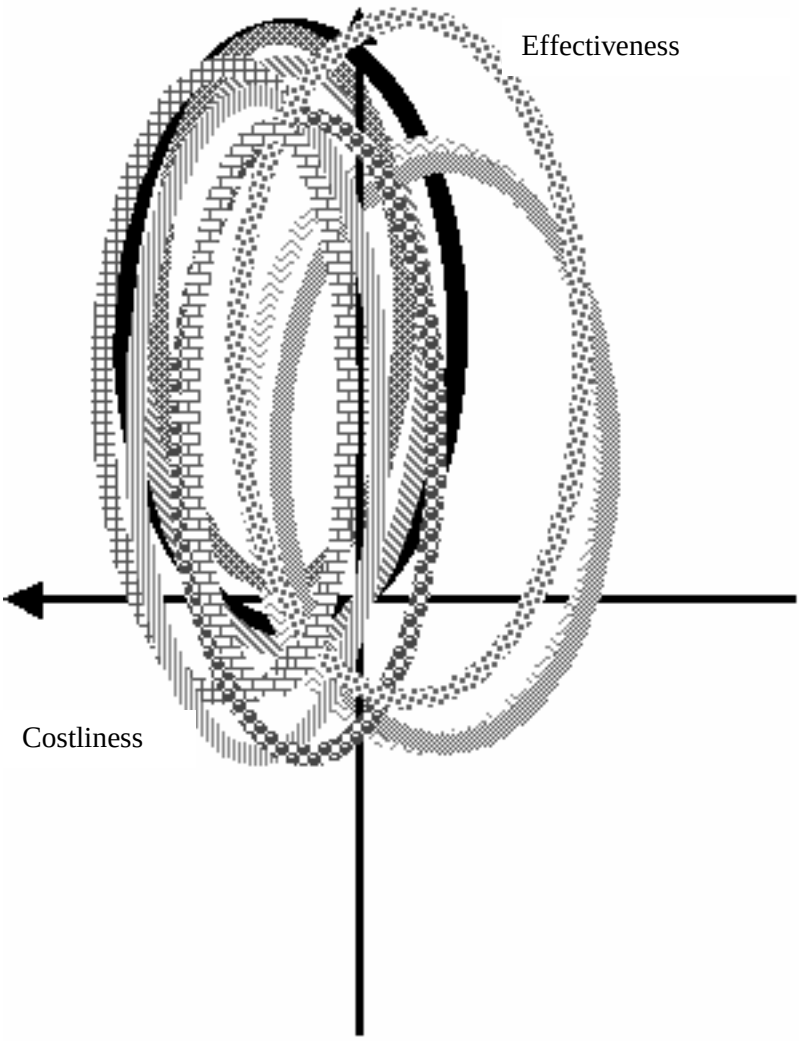
Cost effectiveness was addressed in this investigation by separately considering effectiveness and costliness. As for flexibility and effectiveness, a picture of cost effectiveness of flexible provision of higher education emerges from the case studies, which suggests that:

- As indicated above, the cases could be classes as effective.
- Flexible provision tends to make marginal additional demands on infrastructure costs. In most cases it made additional demands on support services and academic staff time. The additional demands on the resource academic staff time are not usually reflected in additional budget allocations. The demands on academic staff time are satisfied in part at the cost of time spent on research and in part by staff working longer hours.
- The costliness of most of the cases studied is due in part to their innovative status involving establishment costs and small scale of operation.
- For institutions with established off-campus or multi-modal arrangements and which made allowance for design and development demands, flexible provision was not costly, though communication with students was increasingly demanding on academic staff time.
- There may be opportunities for adoption of more economical procedures, particularly with increases in the scale of operation.

In the summary graph in Figure 4 each case is represented on the axes according to the range of effectiveness and the range of costliness indicated in the depictogram of the case. The idea of the summary graph is to give an overall impression of the findings of the study with regard to the flexibility and effectiveness of models of flexible provision.

Figure 4: The cost effectiveness of models of flexible provision of Higher Education

Each ellipse represents one case. The ellipse is plotted against the Effectiveness and the Costliness axes according to the charting of the case on its depictogram (see Figure 2).



Conclusions

Reflections against the literature

Expectations drawn from available literature in relation to areas explored in the present study are identified above. The conclusions of the study allow reflection on these expectations in relation to: choices offered to learners; access; student learning outcomes; student and staff satisfaction; student participation; the intentions of institutions in making flexible provision; and cost effectiveness.

As indicated in the National Board of Employment, Education and Training report (1997) approaches involving resource-based learning did offer students some choice about learning styles and, in line with the expectations of Diaz and Cartnel (1999), offered time, place and pace choices to both staff and students.

There was some indication from the study that flexible provision of higher education was helping to counter the disadvantages of students in non-metropolitan regions in accessing higher education, which was identified in Stevenson, Maclachlan and Karmel (1999).

In line with conventional wisdom – Kulik and Kulik (1991), Billings (1994) and Leasure's (2000) – no change in course-specific learning outcomes was observed. However some improvement in attainment of generic skills along lines suggested by Clark (1998) and Bilge (1999) was indicated. As suggested in some literature – for example Cragg (1994) and Billings, et al (1994) – both staff and student satisfaction responses were bipolar. Flexibility was much appreciated but it came at a cost. For some students, staff contact was too limited; for others less flexibility was available than they anticipated. For staff flexible provision often involved a higher workload.

The provision of higher education in flexible forms is increasing and along with it higher participation is occurring. To date, the extent of this higher participation in Australia has not been as extensive as anticipated by the Web-Based Education Commission (2000) in the U.S.A. but it has nevertheless been substantial.

As suggested by Kirkpatrick (1997) and Inglis, Ling and Joosten (1999) Australian higher education institutions adopted flexible provision strategies for a variety of reasons including exploiting new knowledge technologies to provide economies, to enable wider participation of local students, and to increase involvement of overseas students.

While there was the potential to achieve economies of scale as identified in the model employed by Inglis, Ling and Joosten (1999) the potential was not realised at this point in most of the cases surveyed. Infrastructure and development costs, in line with the expectations of Evans (1999) and the Web-Based Education Commission (2000), make flexible provision marginally more demanding on resources, especially academic staff time, than traditional approaches.

Recommendations

Each case is individual, reflecting institutional responses to their own histories, needs and environments and the research approach adopted does not lead to generalisable conclusions. A review of the findings of the cases in conjunction with the literature does, however, suggest some possibilities for effective and cost effective flexible provision of higher education which inform the following recommendations:

- Universities, rather than making incremental and additive changes to programs, should consider redesigning programs for flexible provision taking into account the educational

potentials of available media, opportunities for economies of scale and the constraints on available resources, particularly academic staff time.

- Universities should seek opportunities to make use of tuition materials for both on-campus and off-campus tuition and combinations of the two in order to make provision economical and to make provision flexible in terms of time, place and learning style preferences of students.
- Universities should seek opportunities to spread design and development costs of tuition materials including collaboration between institutions, voluntary or commercial pooling of learning resources using data-tagging, and the purchase of commercially available materials.
- Universities should consider making more use of infrastructure and resources outside of the higher education sector, such as those in the workplace and the home, which are available at little cost to the education provider and are convenient for the learner.

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Implementing Quality Assurance in Tertiary Education

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Abstract

The paper outlines some of the principal issues and models, before turning to a more sustained consideration of quality assurance in the UK. That treatment explores both external pressures and institutional responses. In the concluding section a multi-axial approach is outlined as a possible means of aiding understandings and facilitating implementation of quality assurance in tertiary education.

Introduction

Implementing is interpreted broadly in this paper to embrace consideration of design, purposes and outcomes, as well as the complex task of establishing the necessary processes, procedures and systems and building a supportive culture.

There is now a substantial literature on various aspects of quality assurance in higher education, including illustrations of the difficulties of design and implementation and of challenges to prevailing values and cultures.

In many ways the reaction within tertiary education to quality assurance contains elements of conservatism, resistance to change, protection of autonomy and academic freedom, critical questioning and doubting of the appropriateness of a simple transfer of ideas (fads) from other sectors.

Birnbaum (2000) *Management Fads in Higher Education* offers some solace pointing to negative, as well as positive responses within business to Total Quality Management. Moreover that literature highlights many relevant challenges such as poor connection to strategic priorities, insufficient attention to outcomes, underestimating the difficulty of cultural change or the costs involved and confusion over purposes and processes.

If, as Barnett (2000) argues, universities increasingly operate in an age of super complexity and uncertainty, it may not be too surprising if that also involves cultural complexity and diversity, relatively high degrees of ambiguity and the presence of many apparent paradoxes, and of contemporaneous divergent and convergent forces, strategies and policies.

Understandably, it might appear axiomatic that this paper should address the growing importance and impact of one dimension of the newer manifestation of the regulatory power of the state in tertiary education, namely the development and implementation of external audit and/or assessment of the processes and procedures for, and practice of quality assurance in tertiary education at a variety of levels. That, indeed, is the primary focus of the discussion but implementation can arise from localised initiatives, and will always be subject to institutional filtering and interpretation, and to discourse and challenge, both from within the academy and by

other stakeholders. These points will be illustrated shortly through a consideration of recent developments in the United Kingdom.

Every system of tertiary education has some unique characteristics, even where there may be aspects of common histories or recent trends which create relatively strong bonds or commonalties. In large measure, that statement is valid both at the level of institutions and disciplines. The University of Oxford and Oxford Brookes University may share a common geographical location but they are very different institutions, with different histories, missions, priorities and cultures. Likewise Geography and Physics are different disciplines, with different approaches, sub-cultures, values and traditions. Within a meta-grouping of institutions or disciplines e.g. the research-intensive universities or the social sciences, there remains critical fine-graded distinctiveness which external systems for checking and enhancing assurance must recognise, honour and capture.

Not only does the topic of quality assurance in tertiary education interweave with debates about institutional autonomy and the regulatory power of the state but it also, arguably more fundamentally, entails, explicitly or implicitly, assumptions about the nature and purposes of tertiary education and the roles and influences of various stakeholders (academics, other staff, students, academic managers, governors, employees, professional bodies, national government, local government, parents. alumni, sponsors and other funders, other interested groups).

Brennan (1999) has suggested that four foci feature in quality systems, namely: academic; managerial; pedagogic; employment/professional. Many systems will feature two or more but Brennan believes that in any system at any point in time, one will be dominant. His categorisation relates closely to the influences of different stakeholders: the peer community of each discipline; academic/administrative managers; educationists and educational developers; and employers and professional bodies.

A slightly different dimension of the discourse surrounds the reaction to views of students as commodities (products) or consumers/customers which arise from the market-commodity trend not only in many systems of tertiary education but more generally in public services. To some extent similar tensions and forces underpin broad models of university management such as the four types articulated by McNay and Davies (1995) namely: corporation; enterprise; bureaucracy; collegium. In a similar vein Thorne and Cuthbert (1996) also suggest four types of institution: autonomous professional; managerial market; professional market; market bureaucracy.

These models focus respectively upon the link between policy direction and operational control, and upon the relative influence of different sets of stakeholders in the management of the institution. Whilst to some extent these, as the co-authors acknowledge, are simplifications of complex and finely-textured realities, they nonetheless usefully remind us of the challenges confronting the design and implementation of quality assurance in tertiary education. Another useful typology is that of Bergquist (1992) who wrote of the four cultures of the academy: collegial; managerial; negotiating and developmental. These provide useful lenses through which to view the questions of design and implementation since they should, by definition, be capable of transcending the organisational complexity of tertiary education crossing centralizing / localising divides within institutions and addressing the trans-institutional patterns of disciplines and academic guilds or of professional and statutory bodies.

Before focusing attention upon changes to the approaches in Britain to assuring quality in higher education, four important caveats need to be made. Firstly, the following observations should not be read or interpreted in any sense as representing overt or invisible academic imperialism.

Instead they are offered to inform broader discussion of the topic of implementing quality assurance in higher education. Context is highly influential and the British situation, traditions and experiences, are not likely to be identical to those in other systems. Secondly, the British situation has been characterised by relatively rapid evolution. Moreover, currently, there is considerable debate over the shape and nature of the next step, so it is an account of a dynamic and fluid system. Thirdly, there are significant differences of perception between key stakeholders over purposes, means and achievements. Fourthly, no system of higher education is self contained or closed. Many students from other countries study in Britain and students from Britain undertake part of their credit-bearing studies overseas. Additionally there are the potential consequences and implications of globalisation, borderless education, online learning, lifelong learning and massive growth in participation in higher education. Whilst the detailed implications, collectively and separately, may not be known, certainly not calibrated, these trends generally heighten demands for assurance of standards, benchmarking of qualifications, policies and practices, and explicit specification of programmes, of aims, outcomes and achievements, of monitoring, evaluation and enhancement.

Sometimes specific circumstances sharpen the debate, such as the Bologna Declaration between a substantial number of European countries. Equally, comparative research whether independent or commissioned, major conferences such as the SEAAIR or inter quality agency for a can promote exchanges of experiences and plans, promote reflection and inform future practice and development. Any consequential convergence is often at a fairly broad level, for example on common principles, shared key purposes or the over-arching structural characteristics of systems.

Quality Assurance in the UK: The Background

We can briefly summarise the situation in Britain between the mid 1960s and the late 1980s by stating that the Universities, through their supreme academic bodies, normally the Senate, were responsible for the quality assurance and standards of their awards. In contrast the other institutions of higher education, under the prevailing binary system, had their awards accredited by an external body, the Council for National Academic Awards (CNAA). Cutting across the binary divide was the influence of those professional bodies which accredited programmes as a basis of satisfying, in whole or in large measure, their entry requirements.

In the university sector the principal strand of external assurance was provided by the ubiquitous use of external examiners – a focused peer, collegial, guild-based approach to quality assurance. A standard requirement upon the external examiner was to attest that standards matched, or exceeded, those in other universities of which they had detailed knowledge. That statement applied to the performance of candidates, the appropriateness of the assessment instruments and procedures and of the curriculum. However in the 1980s there were mounting pressures, from government and their advisers, for more explicit external checks on quality, with some favouring an extension of the method of inspection used in other parts of the education system in Britain.

In an attempt to address the concerns and to forestall such inspection, in 1990, the Committee of Vice-Chancellors and Principals (CVCP) established an Academic Audit Unit and introduced external audits of institutional policies, procedures and practice in assuring the quality of programmes and provision. Notwithstanding that initiative, as part of the legalisation associated with the abolition of the binary divide and the creation of new funding councils for higher education, government required those bodies to use information on the quality of provision to inform their judgements over funding, which led directly to the introduction of procedures for the assessment of the quality of provision at subject level. Thus from the early 1990s the British

system of higher education experienced a dual approach to external quality assurance, at institutional level audit of procedure, policies and practices, and assessment at subject level. Responsibility for audit was vested with the Higher Education Quality Council, whilst that for assessment lay with the respective funding councils for England, Scotland and Wales (the small system in Northern Ireland used the English approach).

Common features to both audit and assessment included:

- the production of self-evaluation documents
- the use of peers as auditors or assessors
- with the exception of the internal phase of assessment in England, the processes involved institutional visits by the team of auditors or assessors
- the production of published reports with institutions seeing a draft in order to check for factual accuracy
- the articulation of guidelines and criteria for the processes and judgements
- cyclical operation
- piloting before full implementation
- fairly widespread consultation over procedures, approaches and criteria
- training of auditors and assessors
- external evaluations of both approaches (albeit of differing frequency)
- the desire to promote and disseminate good practice.

Basically once the system was operating, an institution might expect every major area of provision to be assessed on a six-yearly cycle and that it would also receive an audit visit. Both sets of processes changed over time. For example the scope of audit extended to overseas provision. Additionally the approach to assessment differed in detail between England, Scotland and Wales.

Many academics may not, instinctively, have wished or welcomed either process but generally they related more readily to assessment since it focused upon their subject and the peers were drawn from that guild and relevant professions/areas of employment/interest. By comparison audit was often seen as more remote from their territory and interest and as favouring centralist tendencies or approaches. In truth an element of both perspectives was certainly helpful and arguably inevitable, certainly for effective internal quality assurance. Put simply, the institution is responsible for standards and the quality of awards. It may, sensibly, devolve considerable responsibilities to the relevant peer community but it ultimately must have confidence in, and therefore knowledge of, performance of the delegated powers, roles and duties.

Views differ about the insightfulness of these processes and, particularly, over value-for-money. That said, most institutions and departments/programme providers learned quite a lot from the preparatory work that was necessary, including the writing of the self-evaluation document. Visits that created a constructive professional dialogue facilitated further gains as did participation of staff as auditors or assessors. It is now commonplace to hear people stressing how much can be learned from the insights that are available to those practising as auditors or assessors. The principal area of disagreement surrounded the extent of additional learning derived from the reports, the degree of dissemination of good practice and the scale of consequential reflection, action and embedding. Amongst the conclusions of Brennan *et al* (1997), evaluating the impact of quality assessment on institutions for the Higher Education Funding Council for England, was the view that in essence the more a department/provider put in to the quality assessment, the more it tended to gain from it.

Recent developments

Calls for reform, and particularly for re-alignment, of the dual approach, led in the mid 1990s to various committees being established to consider the next steps. These reports led to the creation of a new unitary body, the Quality Assurance Agency for Higher Education (QAAHE). Key recommendations of the National Committee of Inquiry into Higher Education (1997), commonly known as the Dearing Report, proposed additional powers for QAAHE, notably on standards, and outlined a framework to inform the future evolution of the approaches to quality assurance in the UK.

After further discussions and consultations, a new, connected system of audit and subject review was developed. It was piloted in 1999/2000 and implemented in Scotland in 2000/2001. Wales deferred commencement and in England the earlier system of quality assessment had still to complete one cycle.

The first cycle of reviews of over 40 subjects was planned to take place between 2000-2006. Two areas are addressed in each subject review namely: standards and quality. Standards are adjudged in terms of the appropriateness of aims and outcomes, curricula and assessment and lead to a threshold decision of confidence or otherwise. A third category, limited confidence, can be used where there is a likelihood that the current basis of judgement will be substantially affected in the short-term, i.e. next year or two.

Four aspects feature in judgements about quality, namely: teaching and learning; student progression; learning resources and enhancement. The judgements for each can be failing, approved or commendable. Finally specific aspects can be described as exemplary, if demonstrating leading edge practice which could beneficially be transferred elsewhere.
As with earlier processes, subject review operates to clear guidelines. However, it now sits within a broad framework of inter-related elements, particularly a benchmark statement for each subject, qualifications frameworks and an extensive code of practice with over 200 individual items of advice. Levels and benchmarks, it is argued, are needed to assist the assurance of standards, whilst the code is intended to both shape practice and provide some convergence and coherence to an increasingly large, dynamic and diverse range of provision, including a very substantial component of higher education programmes offered by further education colleges. Review teams are primarily recruited from the relevant peer communities but each is led by a Review Co-ordinator who works on a broader contract for QAAHE and specifically will not have a specialised knowledge of the subject under review.

The QAAHE agrees a schedule of reviews with each institution, a scope and preference agreement. Institutions are expected to provide the relevant self-evaluations at the commencement of each year in the review cycle. They are notified of the membership of the review team and can request changes. The Review Co-ordinator and the institution, normally through the institutional facilitator for that review, agree dates of initial meetings, agenda and practical details, including any additional preliminary documentation.

On the basis of the first set of reviews in Scotland, reviewers on average spend between two and four days in the institution, and a larger number outside reading documents and drafting the report. Generally teams consisted of between three and six reviewers, depending upon the scale and complexity of the provision.

At one stage it was envisaged that the process could span across a complete academic year. That has been reviewed and the engagement part of the review is now more typically expected to last some 6-8 weeks, although the complete process from initiation to final published report will take many months.

Between March 2001 and January 2002 about thirty two-day training sessions will be held for reviewers, supplementing the smaller number of events which were held in 2000. Review Co-ordinators receive additional dedicated training, as do institutional facilitators.

Another component of the process is the institutional profile. An initial profile has been prepared using existing evidence from audit and assessment reports. The intention is that the profile will be updated continuously in the light of future subject reviews and institutional audits.

Amongst the aims of the design of the new system was that it would allow a 'lighter' touch. In part institutional profiles are intended to inform that preliminary judgement. In essence an institution with a strong track record should expect to receive, a "lighter touch" check on quality assurance than one which has a weaker record or has had significant problems. Of course, if necessary, review teams can adjust the scale of any review, shortening or lengthening as appropriate, subject to discussion with, and agreement by, QAAHE.

The first set of subject review reports is about to be published. Information presently available indicates that all of the provision reviewed satisfied the threshold on standards and much of it was of commendable quality. Details of the procedures, codes and reports can be accessed at: www.qaa.ac.uk

At this juncture it should have been possible to report on the full roll-out of the process across the UK but events earlier in 2001 have altered plans. Quite how much and in what ways remains to be resolved. Many factors and forces have influenced events. Key amongst them were evidence in a report to HEFCE about the costs to institutions of the quality assurance regimes, alongside strong political lobbying from the research-intensive universities and some broader concerns, particularly in England and Wales, about the new system. These pressures led to a pronouncement from the Secretary of State for Education (in England) that the burden of review should be substantially reduced. Debate ensued about how that could be achieved and a substantially revised set of proposals is currently under consultation. If adopted, it would mean that all provision would be subject to audit, possibly every three years. These audits would "drill-down" selectively into some subjects. Higher education provision in the further education sector and provision which had not been previously assessed would be handled by subject review. Otherwise the extent of sampling or drilling down would be determined by the institutional profile.

Various working parties are considering other aspects, such as the provision of reliable data by institutions to inform student choice and the position which might be adopted by each Funding Council. (Currently they contract QAAHE to undertake the task.) At present it appears that Northern Ireland will follow the consultation proposal, which is also broadly supported by Universities UK (the successor to CVCP) and its regional counterparts, e.g. Universities Scotland.

Institutional Responses

Institutional responses have varied in detail, in large measure dictated by tradition and managerial preferences, although that has been tempered by pragmatism and even necessity. For example,

every institution which considered, after a period, that the outcomes of assessments and/or audit, were disappointing took specific steps to address the matter.

Some commentators believe, and many practitioners fear, that the processes have favoured centralisation and managerialism at the expense of collegiality and devolution of responsibility. Yet most institutions have simultaneously shifted towards devolution of the management of resources and operational oversight, often to enlarged units or groupings such as Faculties or Schools. As Becher and Trowler (2001) illustrate, the influence of academic tribes and territories continues to be powerful, notwithstanding the various pressures and forces for change, including those arising from shifts in paradigms and in knowledge production. However, it is true that these matters continue to be hotly contested within the academy.

Generally several common features characterise institutional responses, including:

- the need to negotiate commitment
- an emphasis upon development rather than compliance
- an emphasis upon internal ownership and benefits
- ensuring that institutional distinctiveness, diversity, culture and values are not threatened or endangered
- learning from experience, and using it effectively
- providing strong, knowledgeable and effective administrative and developmental support
- exercising care over the review and operation of internal systems and procedures to ensure that they dovetail productively with the needs of external requirements without degenerating into mere compliance
- allocating oversight and leadership of quality as a major portfolio of a senior academic officer, supported by appropriate committees and structures at the various levels of the institution
- promoting an explicit commitment to the quality of educational provision and careful documentation of intentions and achievements.

Probably every institution requires, although the tone of the language varies, that there is central and/or senior scrutiny of all self-evaluation documents before they are sent to QAAHE. A few write all documents centrally. Some institutions conduct formal mock assessments or audits. Others prefer to use the existing, often strengthened, internal mechanisms for review, monitoring and enhancement.

The fact that institutions have quickly learned from experience is one demonstration of dissemination of practice. However, dissemination of educational innovation and practice remains problematic as various reports to HEFCE have shown. In essence experience shows that it is difficult to cross institutional and disciplinary boundaries.

In the UK further complexity arise from the fact that each funding council operates some distinctive initiatives and policies. Thus HEFCE requires institutions to submit a learning and teaching strategy prior to prorata release of funding. Scotland and Wales now expect broadly similar policies but without corresponding earmarked funding. The latter in England is part of a substantial sum associated with the Teaching Quality Enhancement Fund (TQEF). Other strands address discipline-based and developmental projects, largely targeted at the promotion and dissemination of good practice. Scottish and Welsh institutions do not quality for these projects.

Elsewhere Gordon (forthcoming) has documented the various initiatives. Further TQEF has been the subject of a recent evaluation for HEFCE and Gordon, D'Andrea, Gosling and Stefani (2001) have recently completed for HEFCE research on building capacity for the scholarship of teaching. The point is not to detail all of the relevant initiatives but to demonstrate that there are significant sources of variation, in opportunity and external developmental support across the sector. That, of course, is probably inherent in the nature of things, for it is doubtful if, in this context, it is possible to attain a truly level playing field. What it does mean is that external systems of quality assurance need to be sensitive to these matters and to think carefully about criteria, guidelines and expectations.

Within higher education, leadership continues to be based upon credibility and consent. Of course, skilful leaders create and nurture the necessary climate for both conditions. They can, and do, shape the culture and negotiate the outcomes, but academics are likely to express dissent if they do not perceive there to be benefits or value-for-money from actions, strategies and policies. Liston (1999 p93) emphasised seven elements of any institutional plan for quality:

- leadership
- policy and planning
- information and analysis
- people
- client focus
- key processes
- outcomes

While there could be substantial debate within the academy about some of her headings, there is no obvious reason why a comparable listing could not be used to guide devolved practice. Indeed, many might accept the items with some rewording.

Basic operations at the level of programmes are:

- what is the responsibility of each individual for quality?
- how does that relate to the collective responsibility?
- what are the policies and how are they determined and reviewed?
- what are the guiding purposes and what is the ethos of the department/programme?
- why are particular things done/taught?
- how do we know they work/are relevant?
- how do we monitor and evaluate?
- how is feedback used to inform enhancement?
- how is that communicated to relevant stakeholders?
- how are standards set, assured and enhanced?
- how are levels benchmarked?
- how is innovation encouraged?
- how do policies and practices connect with institutional mission and priorities?
- how is quality assurance perceived? (e.g. essential/compliance? continuing/episodic?)
- how is sense making achieved?

Concluding remarks

Toward the end of the previous section, my remarks became more general and generic and not necessarily specifically related to the UK, although undoubtedly informed by more than a decade of active experience on various fronts and levels of that system.

In my view effective quality assurance ultimately hinges upon the active engagement of the academic community. That is not a defence for a self-centred stance, rather it is intended to emphasise where primary responsibility must lie. If so, several consequences follow including the necessity for clear, insightful and robust internal systems of quality assurance and a widespread commitment to enhancement. In such an environment, external scrutiny is facilitated and a 'light' touch is achievable. Key ingredients are the cultivation of a sense of ownership and of relevance, good communications and a culture of trust founded upon confidence in systems that are effective and are regularly benchmarked and monitored.

The academic constituency expects external scrutiny to be consistent in judgements and for the latter to be reliable and well-founded, whilst simultaneously preferring the approach to be flexible and capable of considerable contextual sensitivity. These objectives are not unattainable and indeed can be progressed if a sensible attitude is taken by both parties and the emphasis is upon open, constructive professional dialogue. That said, no dialogue is value-free and even minor tensions over values can readily become sources of friction.

However when a wider range of stakeholders interests must be addressed, the situation quickly becomes more complex. Any requirement for, or expectation of, comparable data can threaten flexibility. It can also lead to the development of graded judgements, in effect rankings. If that occurs, the focus can shift to competition, with game-playing strategic responses. That differs in vital ways from a culture of enhancement and the associated continuing journey towards that goal. These issues are not easily resolved as experience, almost worldwide, has shown. But the solution will be contained within a framework involving limited purposes, ownership and commitment, supportive environments and cultures, good communication and respectfulness.

Schemes can suffer if any of these ingredients are absent or out of balance. Some external stakeholders, for example governments or students, may welcome compliance as a means of assuring standards. But compliance is not readily translated into commitment, so the compliance-enhancement fulcrum requires careful attention.

In conclusion a multi-axial approach may aid our understandings and facilitate implementation. Here seven axes are offered:

compliance – enhancement
consistency – flexibility
external definition – internal ownership
managerial – collegial
multi-purpose – limited purpose
judgmental – developmental
episodic – continuing

Hopefully they capture most of the key dimensions. If so the model could merit greater discussion and articulation.

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Strategies for Total Employee Involvement in Ensuring Quality in Tertiary Education

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Abstract

Ensuring quality in teaching and learning in tertiary education is crucial for quality output. Critical to quality assurance is total employee involvement. In its effort to achieve quality assurance, the Faculty of Management and Human Resource Development, UTM boldly adapted the ISO 9001 Quality System as its quality model. To achieve total employee involvement, it employed a number of successful strategies: obtaining full management support, maximizing staff involvement, employing the 3A strategy and empowering middle management. These were translated respectively into the formation of key committees, appointment of key process owners, adoption of the 3A strategy, organization of numerous quality programmes and optimization of academic expertise available.

Introduction

With the effort to improve the capability of Government agencies in providing quality services to their customers, the Malaysian Government has decided that all Government agencies should implement the MS ISO 9000 Quality System and Standards by the end of the year 2000 (Development Administration Circular, 1996). In response to this imperative, Universiti Teknologi Malaysia (UTM), one of Malaysia's leading universities in the fields of science, technology and engineering has decided to adopt this system in order to ensure that its higher education teaching-learning services and processes are of estimable standards and quality. This is in turn to ensure that graduates of the institution are highly marketable and competitive in the increasing borderless world and vibrant global economy.

To lead UTM in achieving the goal alluded to above, the Faculty of Management and Human Resource Development, or from hereon in, FPPSM, took the challenge and started the quality journey for its tertiary teaching-learning services and processes. The move was very significant by virtue of the nature of the courses and expertise available at the Faculty and in view of the impact that success in adopting the MS ISO 9000 Quality Management System at the Faculty would have on UTM. That is to say, the system and procedures that lead to the success in adopting the system at the Faculty would be used as the main template for all the tertiary teaching-learning processes at UTM.

At the same time, FPPSM was also very much aware that one of the crucial elements in adopting the ISO quality system and the principles and practices of TQM is staff involvement in the quality journey. Without this element effective and efficient adoption of the system would be a long and difficult struggle. This paper therefore highlights some of the strategies the Faculty employed

and personnel deployed in achieving total staff or employee involvement in ensuring quality in its tertiary teaching-learning services and processes.

Implementation of total quality management in tertiary education

Total quality management (TQM) is a set of organizational strategies, practices and tools for organizational performance improvement (Lawler, Mohrman and Ledford, 1995). TQM was first applied in manufacturing settings, with the main focus of meeting customer requirements, and improving work processes through the use of statistical process control methods.

Recent developments in the implementation of TQM have indicated that TQM is suitable to be applied in service sectors. Success of TQM in various sectors led to the interest in applying TQM principles and practice to tertiary education system. It has been reported that TQM principles and practices have been applied in tertiary education in the United States as early as mid-1980s and during the 1990s in universities in the United Kingdom.

Oakland (James, 1996 cited in Kanji, 1999 (3)) reported that he has not seen ISO 9000 fail in higher education and that there is no magic about education while Rooney (James, 1996 cited in Kanji, 1999 (3)) expressed that ISO 9000 does not impose a bureaucratic standard but it is the interpretation that creates the bureaucratisation levels. Kanji (1998 cited in Kanji, 1999) also said that ISO 9000 could be integrated with TQM for the development of a total quality system in an educational setting.

Oregon State University (OSU) explored the implementation of this as early as 1989 with considerable success (Howard and Rudolph, 1996). One quotable success is where TQM principles were used to enhance the teaching process of one of the professors at OSU. The transformation was from disappointing course evaluations from students to a changed classroom atmosphere and increased student involvement in the course (Howard and Rudolph, 1993, cited in Howard and Rudolph, 1996). TQM principles were also adopted in the design of academic curriculum (Kleinsorge and Seville, 1995 cited in Howard and Rudolph, 1996) which resulted in up-to-date curriculum, better understanding of courses that emphasized content across several disciplines, better public relations with both OSU's internal and external customers and enhanced teamwork between members of the different disciplines (Howard and Rudolph, 1996: 190).

University of Aston and University of Wolverhampton in the U.K. have each turned to TQM principles and practices to deal with problems such as decline in student funding, drop in student performance and graduates that do not meet the requirements of their external customers and dissatisfied employers on the quality of their graduates (Kanji, 1999 (3). In Malaysia, the move to adopt TQM principles and practices in higher education institutions is to expand and improve the productivity of this sector (Kanji, 1999 (3)).

Implementation of ISO 9000 quality system in FPPSM

With such successes reported and the benefits of TQM reaped by many organizations, FPPSM boldly paved the way in adopting the ISO quality system as a tool to improve its teaching-learning processes to produce quality output. To promote excellence in the core business, the Faculty reviewed all the teaching-learning practices and processes to ensure that the quality output meets with the needs of the employers and other external customers.

Quality output in the context of tertiary education, in this case, FPPSM covers two categories. The first quality output is the graduate of the university while the second category of output is the output of the teaching and learning processes, namely the course modules, course examination papers, and undergraduate project work.

Critical to quality assurance and achievement of complete efficiency and effectiveness of a quality system is total employee involvement (TEI). To this end, FPPSM employed a number of successful strategies. These were in the form of obtaining full management support, empowering middle management, maximizing staff involvement and deploying the 3A strategy. To successfully implement these strategies, key committees at the faculty level were formed, key process owners were appointed, the 3A strategy was employed, numerous quality programmes were organized and academic expertise in the different fields of study available at the faculty were optimised. However, before these are further elaborated it would be useful to review some of the discussions related to TQM (and ISO 9000 Quality Management System) and total employee involvement (TEI).

Successful implementation of TQM programs (Crosby (1976); Ishikawa (1976); Feigenbaum (1983); Deming (1986) and Oakland (1989)) and recently the ISO 9000 Quality management System in an organization depends much on the following eight critical success factors that are common to successful TQM:

1. The commitment of the organization's top management to TQM is expressed by providing a clear vision and leadership for quality and by being actively involved in the TQM process.
2. Implementation of the TQM strategy by determining specific TQM objectives and incorporating TQM activity into business plans.
3. Organization of the TQM through the formation of an organizational structure and a team structure to provide a clear line of responsibility and authority for deploying TQM policies, programmes and activities.
4. Communicating TQM by raising quality awareness, informing achievement of TQM efforts and resolving TQM issues and problems during the implementation process.
5. Provision of training and education to instill appropriate knowledge, skills and attitude necessary for employees to carry out TQM activities.
6. Total employee involvement, by ensuring that employees participate at all levels in the TQM implementation.
7. Process management and systems through the documentation of quality system and management of the organisation's process
8. Quality technologies by employing quality tools such as Seven Tools, Statistical Process Control, Business Process Reengineering and Business Process Benchmarking to continuously improved quality systems and processes.

From here it is clear that the implementation of quality programmes cannot be successful without employee involvement (Deming, 1986). Owusu (1999) also asserts that one major characteristic of a world-class agile management system is its employee's involvement. Steudel and Descruelle (1992, cited in Owusu, 1999) quoted the executive director of Matsushita Electric Industrial Company Ltd, as saying that '…the survival of firms…their continuous existence depends on day-to-day mobilization of every ounce of intelligence…Only by drawing on the combined brain power of all employees can a firm face up to the turbulence and constraint of today's business environment…People are the key to the efficient functioning of any organization.'

Lawler, *et al* (1995: 2) iterate that 'in addition to calling for a series of specific practices that are aimed at improving quality' total quality programmes place a strong emphasis on employee involvement. Thus, in the context of tertiary education TEI would mean total participation from all levels of staff: the academic and non-academic staff of the institution. How this is achieved in one faculty is the main concern of this paper.

Conditions for total employee involvement

Total quality management programmes place strong emphasis on total employee involvement. Total employee involvement is frequently singled out as one of the critical success factors in ensuring the successful implementation of any quality programme. Owusu's (1999) definition of employee involvement is 'the participation of the entire firm's workforce to improve the working environment, product quality, equipment productivity, and eventually, company competitiveness'. Lawler *et al* (1995) describe TEI as involvement of employees in the four constituent elements of employee involvement: power, information, knowledge and rewards. 'All four of these features must exist at all levels of the organization. Only when this is the case can the individual performing the work actually see a relationship between their efforts and the success or failure of the organization (Lawler, *et al*, 1995: 2).

From this view point power is regarded as moving power downward in organizations through specific structural approaches such as parallel power-sharing practices (such as quality circles and employee participation groups other than quality circles) and work re-design practices (such as job enrichment or self-management work teams or employee committees concerned with policy and/or strategy). Accordingly, information is the sharing of information about business performance, plans and goals. Specifically information encompasses company's overall operating results, unit's operating results, new technologies that may affect employees, company's business plans/goals and competitor's relative performance. To fulfil the knowledge condition, there should be provision of training in skills in understanding the business, problem-solving skills, leadership skills, quality/statistical analysis skills, team building skills and cross-training for effective employee involvement and total quality management. Rewards refer to key reward practices that are related both to employee involvement practices and to organizational effectiveness (such as individual incentives, work-group or team incentives, profit-sharing, employee stock ownership plan, stock option plan and non-monetary recognition awards for performance).

Conditions for Total Employee Involvement	**Description**
Power	Power-sharing practices and empowerment to maximise employee involvement
Information	The sharing of information about the goals and plans of ISO 9000 implementation in the Faculty, the effectiveness of teaching and learning process and the necessary changes in management activities
Knowledge	Training to instill knowledge, skills and attitude and communication for effective employee involvement in the ISO 9000 implementation
Rewards	Individual and team incentives and non-monetary recognition for participating in the documentation and implementation of ISO 9000

Table 1 Description of the four conditions for total employee involvement in FPPSM

In the context of FPPSM, all four of these conditions have been adapted based on their feasibility as a TEI model at the Faculty. The conditions however, were adapted to suit the faculty environment and characteristics, and specific needs in its effort to ensure total employee involvement in the implementation of its ISO 9001 Quality Management System. How the four conditions defined by Lawler, *et al* (1995) were adapted and utilized by FPPSM are briefly described in Table 1.

Framework for TEI in the implementation of ISO 9000 at FPPSM

For maximum dividends from the quality effort, FPPSM had to translate the four conditions described earlier into a more workable and integrated framework where each condition is not separated and isolated but is in fact, in complementary relationship with each other. Strategies stemming from each of the four conditions were developed which were then translated into several programs organized by the Faculty. The strategies begin with obtaining full management support in terms of human, financial, physical and monitoring. These support come in form of empowering the middle management and incorporating power-sharing structure, allocating the annual budget for Quality programs, reserve rooms and physical settings for the smooth running of TQM activities and coordinating academic activities between units inside and outside UTM.

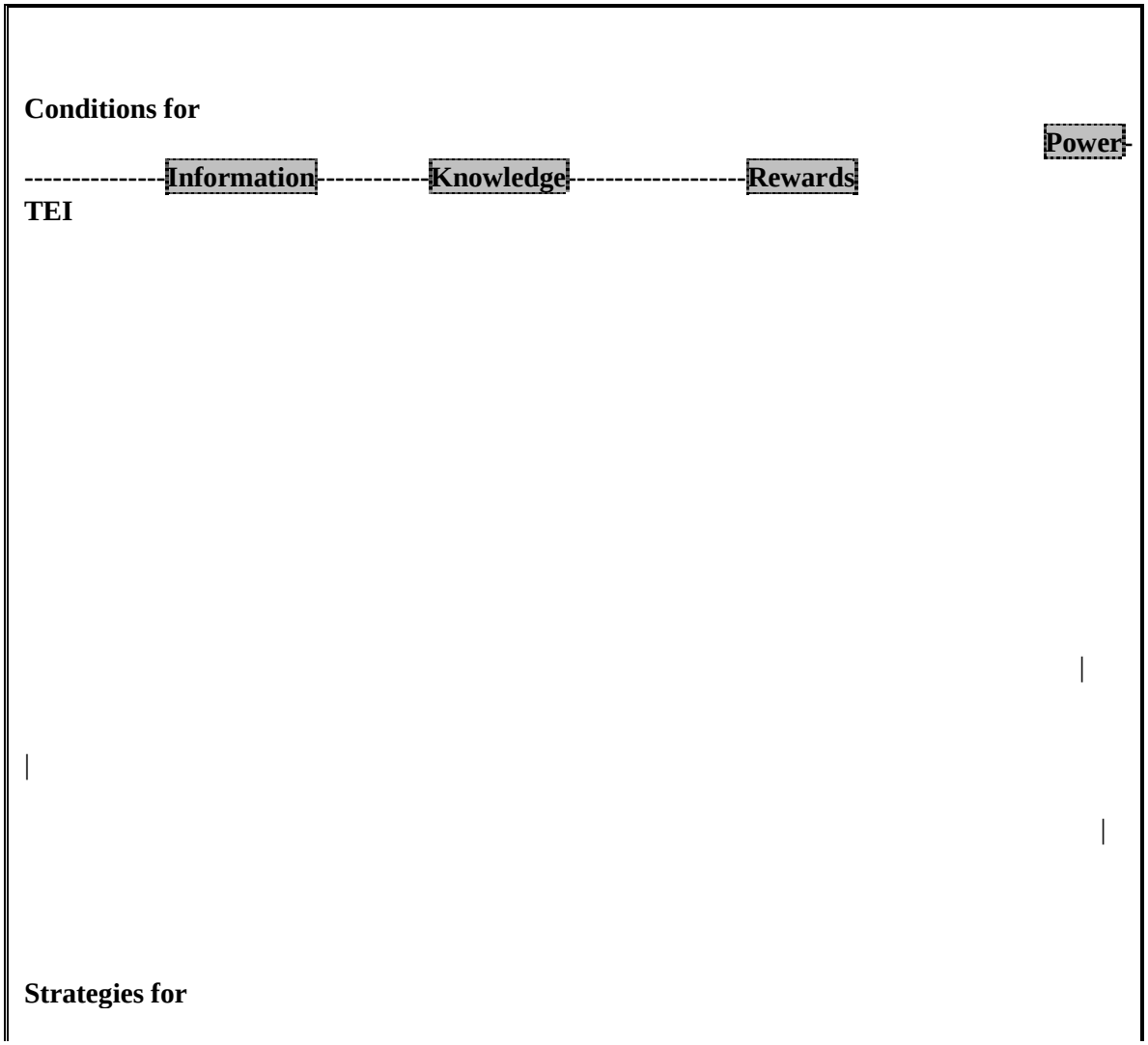

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Figure 1 Framework for total employee involvement in the implementation of ISO 9000 at FPPSM

This had encouraged maximum participation from staff, which in turn fulfil the first condition i.e. power. Employing what is referred to as the 3A strategy forms the strategy to fulfil the second condition (information). Lawler, *et al* (1995) expressed that basic to employee involvement in an organization's quality programs is the sharing of information about business performance, plans and goals. Without the sharing of information, employees are usually limited simply to carrying out prescribed tasks and roles in a relatively automatic bureaucratic way. Thus, information on the ISO quality system, its principles, merits and its goal, its implementation and development and plans is shared with all the staff at the Faculty.

Essential to the third condition (knowledge) was suitable training and, effective and efficient communication. Training was given in various areas to those involved directly and indirectly in the implementation of the system. All medium of communication (printed and electronic) was used for efficient communication for maximum and comprehensive understanding and complete appreciation of the system. While, monetary and non-monetary rewards support the fourth condition (reward) to boost participation and heighten the commitment and degree of involvement of all staff in the system. The framework of condition, strategy and programmes is shown in the Figure 1.

Strategies for successful implementation of ISO 9000 in tertiary education in FPPSM

A few strategies were developed in implementing the ISO 9000 Quality Management System in FPPSM. These were essential in fulfilling the conditions stated above.

Obtaining full management support

In fulfilling the first condition, obtaining support from the Faculty management was paramount. The study by Leslis and Adrian (1996) revealed that management commitment, leadership and continuing support for the TQM process is the most critical success factor if application of TQM principles and practices is to succeed. From this perspective, it is clear that without such support it would have been difficult to persuade and convince the members of the Faculty, both the academic and non-academic staff, to be involved in the quality journey and that this journey is for all to partake. Therefore obtaining full management support was the first major strategy in TEI at the Faculty.

Support was obtained in the form of resources, facilities and budget. Human resources support was in the form of staff appointed to head and be members of committees to coordinate and monitor quality practices and processes, project teams for continuous improvements of work processes and management of academic processes. Facilities in terms of conducive venues and presentation equipment for conducting quality workshops, colloquium, meetings and discussions of committees and project teams were also given. A significant percentage of the annual Faculty budget was earmarked for the conduct of quality programs and activities and this formed a very important support from top management of the Faculty.

Empowering middle management

The next essential strategy was empowering the middle management. Middle management in the context of the Faculty refers to three main groups who are empowered with different

responsibilities and accountabilities. This is to reflect the requirement of one of the conditions of TEI described by Lawler, et al (1995), that is, the downward movement of power through specific structural approaches. The three main middle management groups are:

- Academic staff who are the Heads of Courses, Heads of Panel and Course Coordinators
- Academic management team
- Human resource management and administration.

These members of staff are considered the strength and main resource of the faculty without whom all the teaching and learning services cannot be successfully offered and maintained. To assist the Faculty, these personnel were empowered with several well-defined responsibilities and authorities. The first group was mainly responsible for, in part, the following:

- approving teaching-learning modules
- vetting final exam question papers for endorsement by the Faculty Academic Committee
- reviewing, formulating, developing and deciding on course content
- establishing contacts with third parties (e.g. external customers, stakeholders, etc. and other internal customers)
- selecting, validating and recommending appropriate staff to supervise both the practical training and the undergraduate project
- assisting the respective Heads of department in the smooth running of the courses offered.

Specifically the Heads of the different Academic Panels are distinguished in terms of their academic fields and expertise for example, Head of the Management Panel, Marketing Panel, Economics Panel, Statistics Panel, Human Resource Panel, and Communication Panel, to name a few. These heads are given very clear terms of reference upon appointment. One major responsibility is to ensure that one of the quality outputs, that is, the final examination questions are vetted to ensure that questions designed are appropriate and suitable for the respective groups of students and meet the requirements of the professional bodies (where related). This aspect of the teaching-learning process is regarded as a very crucial and significant stage in the production of quality graduates. For maximum effectiveness, the Heads appointed are those holding doctoral degrees, or are Associate Professors in their areas of expertise.

Heads of Courses have, among others, the responsibility of assisting the respective Heads of Department in making sure that courses offered run smoothly and standards maintained in terms of the number of students' passes and failures, the Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA), the students who enrolled meet the course requirements and so on. Those appointed are experienced senior staff, preferably with doctoral degrees and experience in managing programmes.

The Course Coordinators in turn are those who are in direct contact with the individual lecturers teaching the different courses. The lecturers concerned reports to the coordinator at the end of each semester with regard to course marks and grades, any problems with students' attendance for lectures, and so on. The coordinators are those with experience in teaching the respective courses and with junior staff as members of the committees.

Detailed step-by-step procedures and work instructions for all these are documented in the FPPSM ISO 9001 Quality System Procedures and Work Instructions.

At the organizational level, empowerment was given to the Deputy Registrar and the Assistant Registrar (Human Resources). The academic management team, who report to the Deputy

Registrar, should ensure that all the support system surrounding the teaching-learning process run smoothly, efficiently and on schedule. The support system includes the preparation of lecture and examination timetables, printing of examination questions, the availability of teaching facilities, such as overhead projectors and LCDs in lecture rooms, and the smooth running of student registration at the faculty.

The human resource team is responsible for planning and ensuring that appropriate and relevant training is given to respective staff, as well as planning the budget for the smooth running of the Faculty. Together the appointed key personnel empowered by well-defined responsibilities and accountabilities constitute a dynamic team in assisting the Faculty implement the system efficiently and effectively.

Maximising staff involvement

With full management support gained it was then necessary to mobilize and maximize staff involvement. Total employee involvement requires total participation. Maximising participation also meant participation of non-academic staff at every level of the management and administration and the academic staff, seniors and juniors. Table 2 below summarises the staff directly and indirectly involved in the implementation of the quality system:

Level of management and administration	**Staff involved according to post at faculty**
Faculty top level management and administration (for management support)	Dean of Faculty, Deputy Deans, Heads of Department, Deputy Registrar, Assistant Registrar, IT Manager, Quality Manager
Academic staff - senior and junior staff (for empowerment of middle management and maximizing staff involvement)	Heads of Panel, Heads of Programme, Course Coordinators, Coordinators of various teaching-learning committees both at department and faculty level, subject lecturers, tutors and language teachers
Non-academic staff (for empowerment and maximizing staff involvement)	Deputy and Assistant Registrars, clerks, typists, lab assistants, lab technicians, printing staff

Table 2 Staff (directly and indirectly) involved in the quality process at FPPSM

All staff adhere to TQM principles and practices of getting the right people involved. All personnel at the Faculty need to be involved since the teaching-learning process interfaces with other systems and activities within the faculty such as selection of part-time lecturers and training of current staff. Participation in the process will help all the staff in the implementation roles. System users at all levels of the process must be represented in the quality system.

For maximum involvement in the implementation of the ISO 9000 Quality Management System at the faculty, staff are differentiated in terms of work processes and responsibilities. The table below gives a summary of the committees set up, the process owners required to execute the ISO 9000 and the project teams required for continuous improvement of the teaching-learning processes. From here, it is quite clear that the percentage of employee or staff involved exceeds 70% of the total number of staff at the Faculty.

Involvement of many of the senior academic staff, and academic staff who held different rotational management posts such as the Dean, Deputy Deans, Heads of Departments, was crucial in these teams as they are important in providing valuable input and experience. It is also to ensure that there is consistency in the decisions made as there can be strong oppositions to

Quality Teams	**Quantity**	**Nature of involvement/ responsibilities**	**Description of staff involved**	**Number and percentage of staff involved**
1. **Committees**: a. Quality Committee b. Image Committee	2	Coordination of quality system and implementation according to documented procedures and work instructions and ISO requirements	- Deputy Dean (Academic) - representatives from all three departments - faculty administrative staff - staff expert and well-versed in quality systems and standards, TQM principles and practices - staff experienced in implementation of quality systems	25 or 14.7% of total number of active staff
2. **Process Owners**/work groups of the teaching-learning process e.g. a. Academic Advisory System, b. Curriculum Development, c. Supervision of Project Work, d. Preparation of Final Exam Questions, e. Registration of subjects f. Student and coursework evaluation	19	Brainstorming, agreeing on and standardizing the procedure of each teaching-learning process, preparing the work flow of each process, specifying personnel responsible for each step in the procedure, and personnel responsible for endorsing the output from each process	- experienced senior staff in each process, for example, supervision of project work - current and previous coordinators of each process/committee to ensure continuity, to provide and share valuable input and experience, to resolve differences in work practices, and to minimize any resistance in the implementation of the system - staff directly involved in the process, for example, the supervisors of project work	100 or 58.2% of the total active academic and non-academic staff
3. **Project Teams**: a. Supervision of project work b. Registration of faculty subjects c. Supervision of practical training	3	Reviewing documented procedures and actual practices to arrive at more effective and efficient practices, and for continuous improvement	- staff not directly involved in the process and staff who are not already committed to other responsibilities at the department to provide impartial input and suggestions for improvement - senior staff experienced in the process to share input and experience - current and previous coordinators of the respective process	17 or 10% of senior and junior academic active academic staff

Table 3 Nature of involvement and description of staff involved

decisions by new staff appointed to the post, that there is continuity in the quality effort and continuous improvement in the processes.

The pattern or nature of involvement can be in different forms. Lawler (1988) described the three EI types: suggestion involvement, job involvement and business involvement. A limited type of involvement is the suggestion involvement where the employees have the power to make suggestions for change but not the power to make decisions. Job involvement is based on changes in work design, so that employees have more control over day-to-day decisions relevant to their jobs. And business involvement covers both suggestion and job involvement, and stresses the involvement of employees in managing the business.

In order to emulate these different types of involvement, TEI at the Faculty was reflected in the form of mobilizing members of staff based on their academic qualifications, their areas of academic expertise, their experience in holding management posts at the Faculty and University level, their job skills, and their current and past involvement in the various teaching-learning processes. Table 3 shows a more comprehensive picture of the nature of involvement and description of staff involved in the quality process.

The 3A strategy for total employee involvement

To further assist FPPSM in ensuring that the quality process runs smoothly, the faculty employed what is referred to as the 3A Strategy, which translates into Awareness, Acceptance and Appreciation. The strategy was developed to fulfil the second condition of TEI. Each step of the strategy is manifested in different programmes at the faculty level. Each activity in turn focuses on different members of staff and personnel both academic and non-academic. The mode of the programmes organized also differs depending on the objective of the programmes.

In the context of FPPSM creating awareness of the quality system was a crucial step in TEI at the Faculty. The goal of this initial step in the strategy is to nurture the understanding of the quality system and standards, to make the staff aware of, among others, the relationship between ISO 9000 and quality, the ISO concept, the principles of ISO 9000, the benefits of ISO 9000, and the roles of staff in the implementation of the system.

The next step in the strategy is the acceptance of the ISO 9000 Quality System. For maximum participation, it was essential that there was universal acceptance and agreement in the implementation of the system. Universal agreement on the work procedures and process is essential to ensure that the implementation of the ISO 9000 system would proceed with maximum commitment and with minimum resistance.

Appreciation of the benefits of adopting the quality standards and system is then shown in adherence to the agreed upon documented procedures and work instructions in their daily teaching-learning activities at the Faculty. The full description of the programs will be presented later.

Training and communication

Training and communication formed the strategy to support the third condition (knowledge) stipulated earlier. Well developed communication channels in the implementation of ISO 9000 at FPPSM included regular communication with staff through a variety of media and two-way communication process with channels for feedback available. Media used to communicate the needs of the system and its impact on teaching and learning practices included both the printed and electronic media: the FPPSM website, FPPSM News Bulletin (printed form), minutes of meetings, meetings and discussions. At the same time, employee feedback was encouraged through the Faculty Suggestion Box (for those who prefer anonymity), department and faculty level discussions and meetings, personal communication with members of the Quality team or with the management and administration. Efficient and effective communication channels are essential to create conditions for TEI to flourish, to evaluate results of implementation of the system, to extend the system to the rest of the staff, and to implement changes.

Training at FPPSM was mainly focused on changing mindsets of staff, instilling knowledge of the quality system, developing positive attitude towards the system and inculcating the spirit of continuous improvement. Training was provided to those directly and indirectly involved in the implementation of the system. Quality team members are given formal external training, including training in quality systems, principles, standards, internal audits, quality statistical tools, techniques and analyses. Other who are directly involved such as the process owners were given training in documentation of procedures, process management and process improvements, input on awareness and appreciation of ISO quality system. Staff, who are indirectly involved in the process, are provided with input on executing tasks according to the ISO procedures and requirements documented. This was done through in-house presentations, colloquiums and brainstorming sessions.

Monetary and non-monetary rewards (incentives)

Rewarding and recognizing employee contributions were classified into two categories: monetary and non-monetary rewards. Monetary rewards and recognition come in the form of annual performance appraisal, which translates into increase in the monthly salary of staff concerned, and travel incentives. Non-monetary rewards are in the form of letter of appreciation, appointment as Faculty's representative, placement on the priority list for further studies (at PhD level), self-actualisation and sense of ownership of the processes and sense of belonging at the Faculty.

To support each of the strategies discussed, several different programs were organized. Details of these are presented in the following section.

Strategies	**Programmes**
Obtaining full management support	Regular brainstorming sessions and discussion on benefits of adopting the system, on the critical success factors, importance of commitment and involvement of senior management of FPPSM
Empowering middle management	Seminars/workshops and colloquiums on ISO Quality System, roles of staff in the implementation of the system, empowerment of staff
Maximising employee involvement	Brain-storming session and workshops involving various committees, project teams, process owners.
Employing the 3A strategy	Seminars/workshops and colloquiums on creating Awareness, Acceptance and Appreciation
Training and communications	Suitable and appropriate training in quality systems and standards, job skills, using electronic and printed media etc.

Incentives and non-monetary rewards	Incorporating ISO 9000 implementation project in performance appraisal, Recognition letter, travel incentives, PH.D priority list.

Table 4 Summary of programs to support the different strategies

Programmes for successful implementation of ISO 9000 in tertiary education in FPPSM

In its effort to gain maximum participation and full realizations of the strategies FPPSM organized specific programmes for various levels of staff involvement and system users. Briefly these are presented in Table 4 below:

As the 3A strategy formed the single major strategy implemented by FPPSM for ensuring maximum employee involvement, a more detailed description of the programmes and mode of presentation of the each strategy is shown in Table 5:

Conclusion

For any organization adopting TQM principles and practices, and the ISO quality system, achieving total employee involvement is a major challenge. TEI is regarded as the single important component of successful implementation of quality systems without which any quality effort will be a long and difficult struggle.

In the context of tertiary education, the challenge is even greater. This is because the main resource of tertiary education institutions is its academic staff who are quite comfortable with practicing traditional approaches to promote excellence in education. Thus, for any quality system to succeed in such environment, the commitment, participation and total involvement of its academic staff is of paramount importance. Not only that, but it has to be stressed that the academic staff must be directly involved in the quality system as they are the main resources of the core business of the Faculty, that is, the business of producing quality graduates.

This paper has attempted to share the experience of one faculty in its effort to meet the objectives of producing quality output through the implementation and adoption of the ISO 9000 quality system. It discussed one of the fundamental components of the implementation of the system, that is, employee involvement. How the Faculty set out to achieve this was also presented in the form of strategies formulated, programmes organized, nature of involvement and description of staff involved. It is hoped that what is presented in this paper can be of some significant input and contribution to other tertiary institutions that aspire to implement quality systems and practices for their teaching-learning processes.

Table 5 Description of programme of the 3A strategy

Steps in 3A strategy	Programs	Focus Group	Mode of Implementation
A. **AWARENESS**: To nurture understanding of the quality system and standards	Programmes include those on: • ISO Quality System: principles, benefits to organization • Principles and practices of Total Quality Management/ Organisation • ISO Documentation • Documentation of: Quality Manual, Procedures, Work Instructions	All Faculty members: academic and non-academic Faculty Management and administration	Lecture sessions: dissemination of information on ISO Quality System and Standards
B. **ACCEPTANCE**: to gain universal agreement in the implementation of the quality standards and system for FPPSM	• Adoption of mentor-'mentee' system or coaching of junior staff by senior staff • Coordination of core teaching-learning activities e.g. checking and verifying course outlines of respective subjects offered, vetting of exam papers, selecting supervisors for practical training and undergraduate projects, etc.	i. Heads of Panel ii. Heads of Courses iii. Course Coordinators iv. Members of the different Panels v. Subject Lecturers	Coaching and interaction between the members of the focus group Other participants

C. **APPRECIATION**: to appreciate the benefits of adopting the quality standards and system	• Preparation of teaching-learning materials, modules final exam papers by adhering to the documented procedures and work instructions • Evaluation of coursework for each subject as specified by respective panels and as detailed in the course outlines • Pre-registration and registration of subjects	All academic staff (senior and junior) Authorised personnel e.g. Academic clerk, and subject lecturers	Practice and hands-on experience of day-to-day teaching-learning activities

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Determining Instructional Quality In Higher Education: Transforming Learners Into Consumers

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Abstract

In Malaysian institutions of higher learning, students are still seen in their traditional role of learners. But in a more contemporary approach learners are also regarded as consumers with the right to decide on the quality of 'service' they receive. However, empowering students in the Malaysian education system requires changes in current evaluation policies and practices. Should students be allowed to participate in quality management? What are the implications? These are some of the issues this paper aims to examine in the light of findings of a study on the validity of consumer feedback. Taking into consideration the benefits and the limitations revealed in the study, the paper proposes a co-operative model for more relevant and comprehensive evaluation of instructional quality.

Background

In Malaysian context, higher education refers to education that is pursued after 11 to 13 years of primary and secondary education. It is normally offered by universities or colleges and covers various fields of study related to academic, technical, vocational and agricultural education. The goals of Malaysian higher education can be broadly divided into two - external and an internal. The external goal concerns the meeting of manpower needs of the country for continued socio-economic, cultural and political growth. The internal goal, on the other hand, focuses on the all round development of the individual.

But higher can be considered a fairly new phenomenon in Malaysia. It only began in 1962 with the transfer of University of Malaya from Singapore to Malaysia. The period between 1969 and 1975 saw some rapid development with the setting up of six public institutions of higher learning. The growth was rather lethargic in the 1980s, but the early to mid 1990s was a period of tremendous socio-economic growth for most Asian countries particularly Malaysia. The demand for knowledge workers saw an unprecedented increase during this period. This, together with the rising socio-economic status of Malaysians, led to an increase in the demand for higher education. In keeping with these developments, the Malaysian Parliament passed the Private Higher Educational Institutions Act in 1996 to enable and to regulate private sector participation in higher education. This was a turning point for Malaysian higher education as the burden of providing higher education was now being shared by both the public and private sector. With the aggressive participation of the private sector, Malaysian higher education metamorphosed into a multi-billion dollar (Malaysian) industry. To date, Malaysia has 12 public institutions of higher learning and more than 600 private institutions of higher learning.

Although Malaysians have become comfortable with concepts like privatisation and globalisation of higher education, concerns about the standards and quality of higher education are constantly being voiced. Quality management in Malaysian higher education, being a fairly new undertaking, is still at an experimental stage. The private institutions of higher learning

come under the purview of the National Accreditation Board, which was set up in 1996. The Board monitors courses and facilities provided by these institutions of higher learning. On the other hand, academic faculty in the public institutions of higher learning undergo a compulsory annual evaluation exercise developed by the Public Services Department to ensure accountability and for administrative decision-making, i.e. the New Remuneration System. But because of the shortcomings in the approach advocated by the centralised bodies, some institutions of higher learning have begun to feel the need to complement it with instructional evaluation mainly for the purpose of instructional improvement. Among these universities are University of Technology Malaysia, University Of Technology Petronas and University of Science Malaysia. A survey of these evaluation exercises indicates that the source of evaluative information, as is the case in most Western institutions of higher learning, is consumer feedback.

The Rationale For Consumer Evaluation

Consumer feedback is more widely used compared to other sources of information such evaluation by administrators, peer and self-evaluation because it provides an important and unique perspective of instruction (Braskamp et al., 1985). According to Aleamoni (1981) students are the main source of information about a) the accomplishment of important educational goals, such as the development of motivation for continued learning, and b) areas of rapport, degrees of communication, and the existence of problems between academic faculty and students. He further asserts that this information can help the academic faculty and educational researchers to define the learning environment more concretely and objectively than they could through other sources of measurement. The choice is also supported by logic because students, as consumers, spend the most time in observing the faculty's performance in classroom teaching and are the principal recipients of instruction. Bollington et al. (1990), on the other hand, attribute the popularity of consumer feedback to its cost effectiveness and its high reliability compared to the other sources of information.

The Study

Because it has become commonplace in most Western institutions of higher learning, evaluation by consumers has also become the focus of extensive research especially in North America. While most studies that have studied reliability indicate high or satisfactory alpha levels, internal consistencies or high correlations over different times, validity studies however have been less obvious. They have shown inconsistent or contradictory results making validity of instructional evaluation a much debated and controversial issue. If evaluation data is to serve its purpose, it is crucial that the psychometric properties of the instrument used are defensible. But a survey of the instruments currently in use in local institutions of higher learning provides no evidence of how the instruments were developed or psychometric data on the structural integrity of the instruments. Prompted by the strong need to guide the pioneering efforts of local institutions of higher learning and to generate interest in more local research in the area, the following validity study was undertaken.

The study, undertaken as part of my postgraduate research, involved 1753 students in degree and diploma programs in a local institution of higher learning. Data was collected using the Students Evaluation Of Educational Quality Questionnaire (SEEQ) developed in Australia (Marsh, 1987). Data analysis involved the classical method (statistical tests) and Item Response Theory (Rasch Model). In this study, validity is seen as a unitary concept involving the compilation of different types of validity evidence, namely content evidence, criterion evidence and construct evidence (bias). In keeping with the aims of this paper, only the main findings from the classical method are discussed below.

- *Content Evidence*: Factor analysis conducted to collect content evidence resulted in seven factors explaining 58% of

the overall variance. Only three factors loaded highly on the original factors (Group Interaction, Individual Rapport and Breadth) while four new factors emerged (Characteristic and Behaviour, Feedback and Testing, Organisation and Preparation and Teaching-Learning Value). Apart from personality items, clarity - a faculty competence item, also loaded highly on the Characteristic and Behaviour factor. This finding, relating faculty personality to faculty competence, points to the presence of a different perception or theory about the dimensions of effective teaching among local students of higher education.

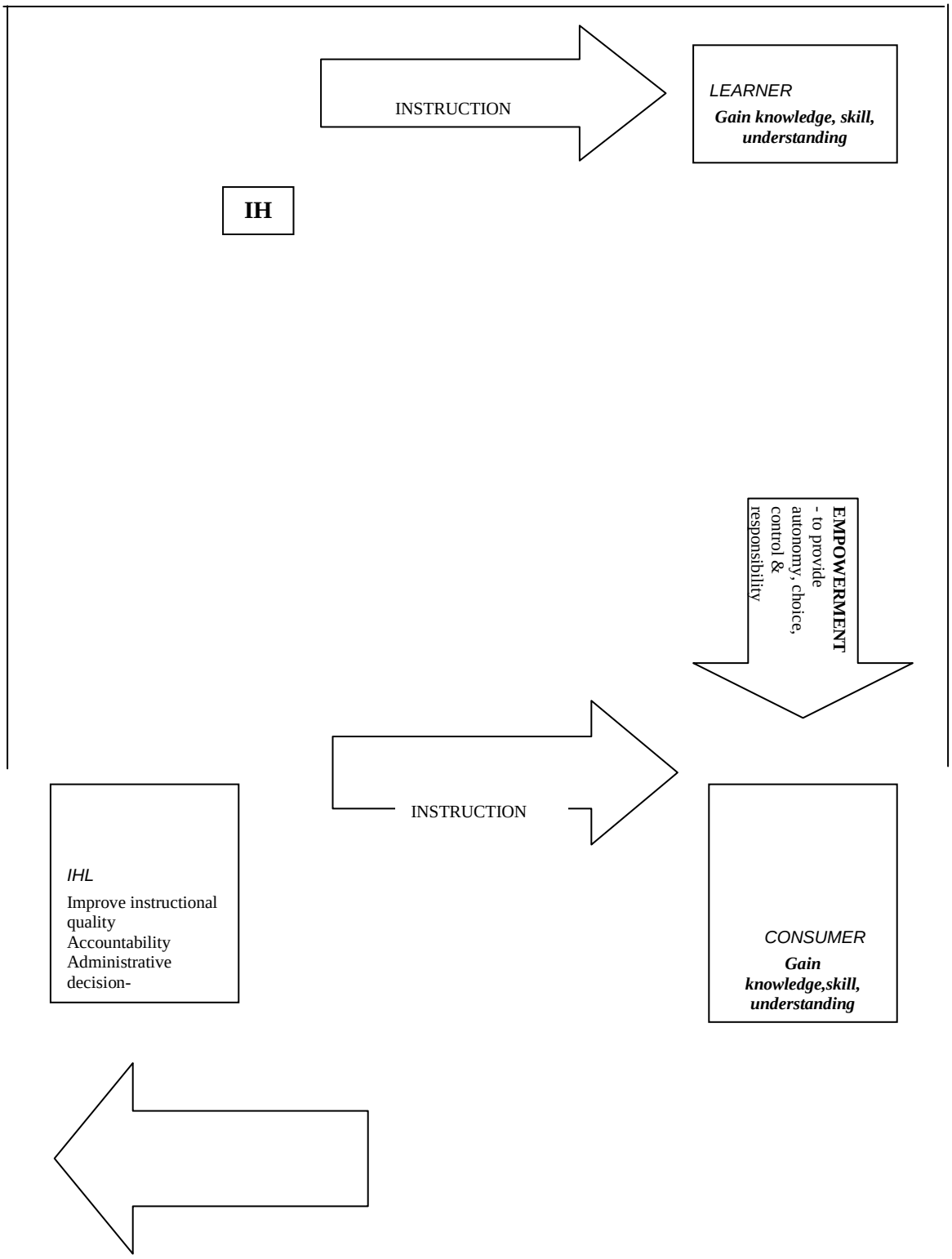
- *Criterion Evidence*: The correlation between students' final examination grades (used as an index of student achievement) and the evaluations, although positive, was too weak to support criterion evidence (r = .042). The correlations between students' grades and the seven factors were also found to be very weak (between .014 and .052) thus pointing to the need to identify other valid criteria of achievement.
- *Construct or Bias Evidence*: The seven non-teaching or background variables (prior interest, expected grade, student and faculty sex, type of subject, workload, difficulty and class size) significantly explained 26% of the variance in the evaluation. The evaluation is influenced to a certain extent by student, faculty, subject and class characteristics.

Considered collectively, the results of this study carry implications for evaluation policies and practices in Malaysian institutions of higher learning. The fundamental duty of an institution of higher learning is to provide instruction. To what extent the instruction is of acceptable standard or quality can only be determined by evaluating the instruction. Unfortunately, higher education policies and practices outlined by the centralised bodies, i.e. the Public Services Department and the National Accreditation Board have not made any provisions for any form of instructional evaluation. The findings of this study reveal that consumer feedback can provide valuable information, for example, on dimensions of teaching effectiveness applicable to local higher education and information on valid criteria of student learning or achievement. In view of this, the following transformation is deemed necessary as illustrated in Figure 1.

According to the model, a learner is in a one-way relationship with the institution of higher learning - he gains knowledge, skill and understanding through instruction from the institution. But the consumer, through empowerment, is in an exchange relationship with the institution. He gains knowledge, skill and understanding and because he is in an environment that fosters autonomy, choice, control and responsibility, he is able to provide feedback on the instruction for purposes of instructional improvement, accountability and administrative decision-making.

Consumer feedback, as revealed by this study, has its limitations in that it is influenced by factors not related to teaching. But instead of writing off consumer evaluation, efforts should be made towards enhancing its value regularly measuring and controlling known sources of influence. Some authorities have also suggested the use of multiple sources of information to overcome the problem. Harris (1986), for instance, has said that to be effective, instructional evaluation should be conducted as a co-operative, collaborative venture with inputs from all its stakeholders - management, academic faculty and consumers. More recently, Cashin (1995) has highlighted that multiple sources enable judgements to be made about all components of teaching. By comparing the models of teaching effectiveness that emerge from feedback from different sources, the validity of the consumers' implicit theories can be ascertained. Figure 2 shows the proposed co-operative model of instructional evaluation that can provide for more relevant and comprehensive evaluation of instruction in institutions of higher learning.

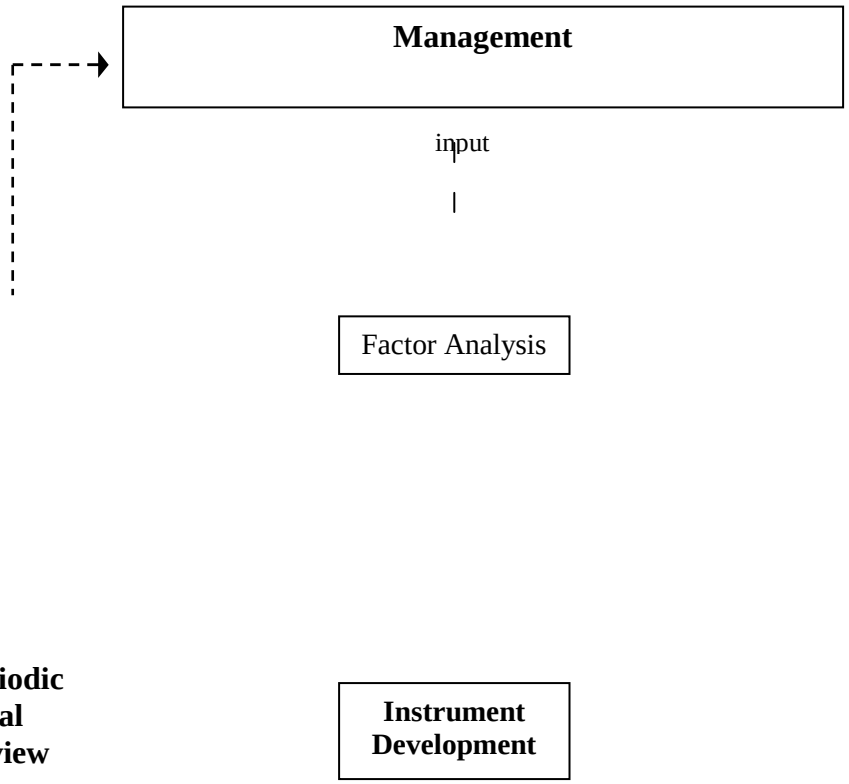
Figure 1: Model for Transforming Learners into Consumers

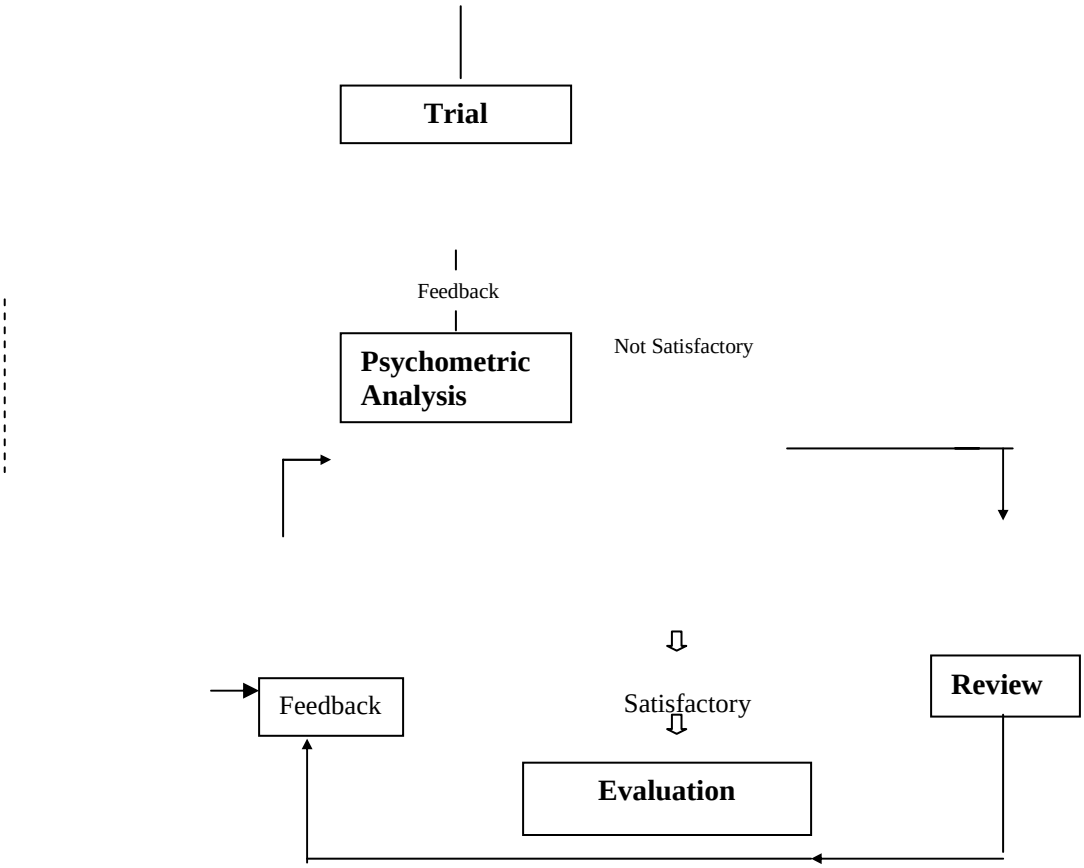


- IHL – institution of higher learning

In the co-operative model, input is sought from the management, faculty and consumers on dimensions of teaching effectiveness through either surveys or interviews. As information on dimensions of teaching effectiveness relevant to local higher education is still very scanty, this aspect of the process would also contribute to the building of a database that can be used by all local institutions of higher learning. The input from the three sources is factor analysed and the result is then used to guide instrument development. A trial evaluation is conducted and the feedback undergoes a psychometric analysis (tests for reliability and validity). If the results are satisfactory, the instrument is used for subsequent evaluations; otherwise it is reviewed based on the results of the analysis. It is important that evaluations of instructional quality are sensitive to changing needs and expectations in local higher education. Thus a total review of the whole practice should be conducted periodically.

Figure 2: A Co-operative Model for Evaluation of Instructional Quality





If Malaysia is to become a centre of excellence in higher education, more concerted efforts are needed, first and foremost, in developing a proper system of instructional evaluation – a system that incorporates the consumers. The fact that there are already pioneering efforts towards this end by the institutions of higher learning themselves is a sign that a thorough study of present policies and practices pertaining to quality management in Malaysian higher education is necessary.

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Entrepreneurship and Commercialisation of Academic Programs in Higher Education: An Australian University's Experiences

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Abstract

Progressively during the 1990s, both in Australia and in many countries throughout the world, Governments have reduced public funding to universities. This has resulted in universities seeking alternative sources of revenue and with the Government encouraging commercialisation of Higher Education – particularly the selling of degree programs. Today, universities have diversified their funding sources, which range from recruiting foreign students, local fee-paying students (mainly postgraduate course work in Australia), leasing university facilities, organising conferences to commercial research and consultancy activities for patrons and industries. This situation is also true for the Case Study University, which is located in a South Eastern Australian State. The University's Graduate School offering management and entrepreneurship programs is almost entirely student-funded. Indeed, during the year 2000, the government only funded 5% of the School's student load, with the balance (95%) being financed by local fee-paying students and international fee-paying activities. This paper discusses the experience of commercialising this school and its entrepreneurial efforts, as well as the marketing of its degrees.

Introduction

Government policy has pushed universities into business competition. For their survival and long-term viability, there is thus dependence by universities on ability to recruit students. There is the over-riding factor that money is more important than anything else. Regarding each other as competitors, universities are now keeping much closer tabs on the activities of other universities in relation to course offerings, fees charged, student pass rates, marketing, modes of student recruitment and provision of ancillary services to students. In many circumstances, as evidenced from the content of the web pages for various universities, there are both implicit and explicit statements about why the offerings of a particular university are superior to those of other universities.

It is envisaged that the impacts on postgraduate schools have been many and varied. The new realities are being internalised, and institutional responses are being developed unique to each school or faculty, though the areas of focus are probably very much the same. The implications for the Australian Graduate School of Entrepreneurship (AGSE) are considered in this paper.

Methodology

The research on this topic relied heavily on the personal experiential learning of some postgraduate Programme Directors, Academic Managers and marketers at AGSE and university level (International Student Unit) as well as on the discussions at School and University level relating to commercialisation of academic programs. These discussions covered topics such as

programme relevance, programme rationalisation, curriculum development, domestic and international marketing, agency relationships, and clientele characteristics and expectations. Invariably, these discussions were held in parallel with others on the strategic refocus of the university and its faculties.

The data was supplemented by personal discussions and ring-ins to relevant staff at other universities in Victoria and New South Wales. As anticipated, there was suspicion and reservation on the part of some respondents when imparting information or when asked to substantiate some assertion or to comment upon an alleged claim. As expected, too, there was outright refusal by some to even discuss any aspect of this topic. Hence, though some validation was possible on some of the findings, cross-validation was not possible due to the desire for confidentiality of purpose on the part of many respondents.

Literature Review and Conceptual Framework

Wells (1994) suggested that in the context of Australian Higher Education, the genesis of commercialisation of Higher Education can be traced to the Government White Paper entitled 'Higher Education: A Policy Statement' issued by the Australian Government in 1988. Inter alia, this paper introduced the Higher Education Contributions Scheme (HECS) in which Australian students were required to pay a fee set at approximately 20% of cost; and introduced the full fee paying scheme in which overseas students are charged a fee based on the average costs to the university. It is suggested that the changes instituted by the White Paper were largely budgetary motivated. In particular, they were designed to increase Government control over and reduce Government funding for Australian Higher Education.

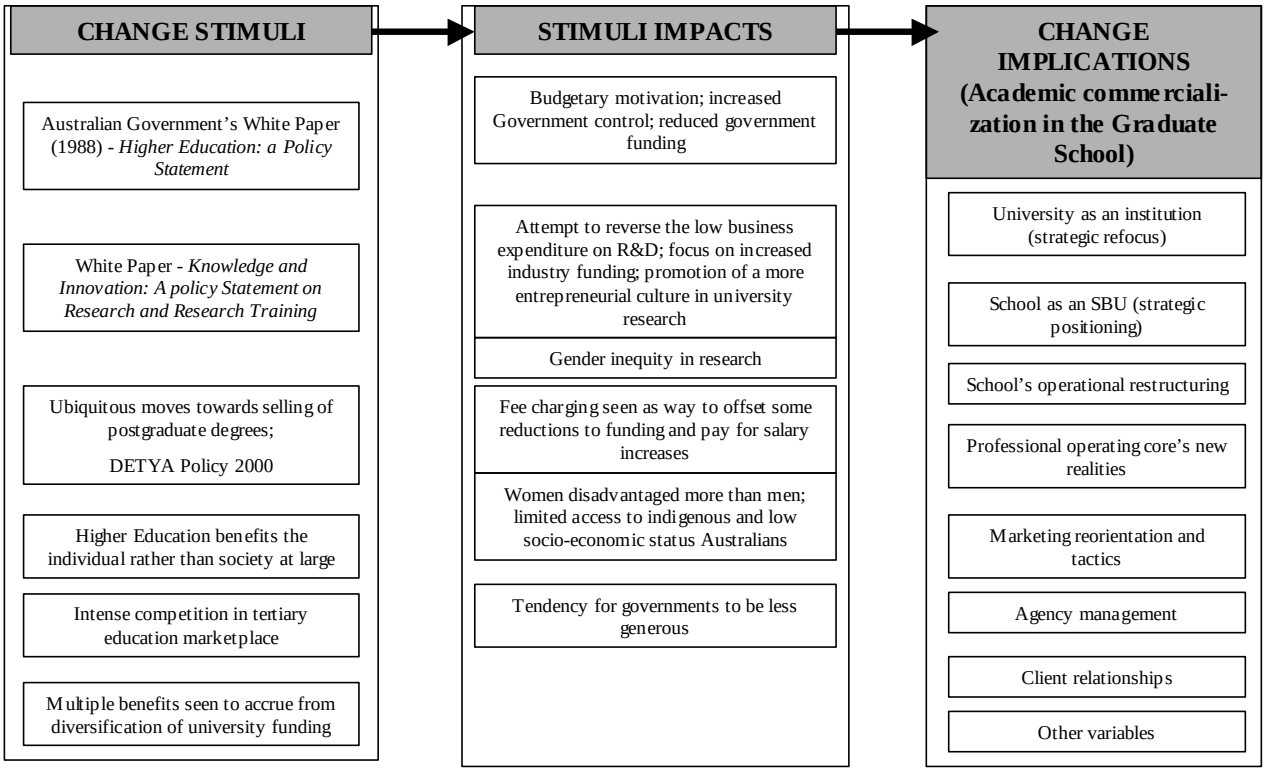
Anderson, Johnson and Milligan (1997) indicated that, since 1989, it has been possible for Australian Higher Education Institutions to charge fees for postgraduate courses. Although such commercialisation of postgraduate course work programs was initially limited to a range of courses, it is now open to universities to charge fee at any level they wish for postgraduate courses in Australia, except those graduate diplomas that lead to an initial qualification in Teaching and General Nursing. This revenue has been seen by the Australian Government as a source of income to offset some reductions in recurrent funding and to pay for salary increases that have not been supplemented by the Federal Government. Anderson, Johnson and Milligan (1997) studied the effects of the introduction of fee paying postgraduate courses in Australia on access for designated groups. They suggested that selling of postgraduate degrees tends to disadvantage women more than men since their fees are less likely to be paid by the employer. Similarly they found that the introduction of postgraduate coursework fees acted as deterrence for enrolment from indigenous Australians and people of low socio-economic status.

Pratt and Poole (1998) indicated that market forces and economic imperatives are driving the internationalisation of Higher Education in Australia. Education export is also seen as an example of the way in which some sectors have responded successfully to the phenomenon of globalisation. Pratt and Poole (1998) further suggested that Australian Universities are not alone in having to respond to the consequences of globalisation and trade liberalisation. They suggested that in a study of eleven countries, including Australia, the United States of America and the United Kingdom, the university system of all but one country (France) had experienced funding levels that had either fallen or remained stable at the time when the dramatic increases in student intakes had occurred. Further, they mentioned that another trend apparent in most of the countries was that Governments were asking their universities to fund increasing proportions of their funding from non-Government sources, including entrepreneurial activities.

Massey and Milsom (2000) indicated that Australia differs from other nations in that it has a relatively higher level of research and development expenditure in Government research organisations and universities and a comparatively low level of business expenditure on R&D. They suggested that the Australian Green Paper on research was an attempt to reverse the low business expenditure on R&D and focus attention on increased industry funding and promotion of a more entrepreneurial culture in terms of research in universities. But they suggested some dysfunctions in universities in turning to industry for research grants including possible decline in national basic research effort and the de-emphasis on gender equity since women university researchers are mainly focused in the Arts and Social Sciences that are unlikely to be funded by industries.

Williams (1998) stated that universities in most western countries now operate in a fiercely competitive market place. He suggested that Governments are unlikely to become more generous since they have too many clients. Further, Williams (1998) indicated that the main benefits of Higher Education accrue to individuals rather than societies as a whole. Accordingly, user pay in terms of Higher Education appears to be supported. Williams (1998) indicated that diversification of university funding sources can lead to healthier institutions and ultimately higher average quality of service to students and societies.

Figure 1. Scope-setting conceptual framework



Daniel (2000) suggested that, because universities have a mission of research, they have an infinite capacity to spend money. Further, it was suggested that universities tend to argue that cost of the teaching activities will always outstrip inflation. Daniel (2000) argued that, since Government finances are constrained in most countries, the rising costs of teaching must be met either by charging more to students or by getting more money from commercial or private

sources. He summarised that this results in higher fees to students and tendency to commercialise the university through advertising and sponsorship.

Scenarios such as those described above, influencing the commercialisation of universities' academic programs, have resulted in positive and negative impacts on the operations of the academic units and on institution-client relationships. The scope and discussion on these variables is guided and bound by the conceptual framework depicted in figure 1.

Commercialisation of Academic Programs in Australia – An Overview

The purpose of this section is to provide some contextual information regarding the commercialisation of academic programs in Australia. As such, it provides an overview for the case study presented in the next section.

Dobson (1995) plotted the income sources for Australian Higher Education from 1939 to 1993. Key findings from this study can be summarised as follows:

(a) In 1939, 45% of the funding source of Australian Higher Education was from State Government coffers with students contributing 32%, investments, endowments and other sources providing the balance (23%).
(b) By mid 1970s Australian Higher Education was virtually fully supported by Governments and no tuition fees were charged from 1974.
(c) The fee free regime lasted only a few years. The Fraser Government instituted overseas student's student charge, which amounted to about a third of the average course cost, in 1979. Later, from 1986 overseas student fees were charged to cover the full cost of tuition plus a capital component. For local students, a $250 per student higher education administrative charge was introduced.

Table 1. Australian higher education % distribution of income by source*

FUNDING SOURCE	1939	1981	1990	1999
Commonwealth Funding	–	89.3	63.5	50.8
State Funding	44.9	0.8	5.0	1.1
Sub-total Government	44.9	90.1	68.4	51.9
Student Contributions # (including HECS)	31.7		20.1 (12)	28.3 (17)
Investment/Endowments	16.1	4.4	7.6	4.8
Other	7.3	5.5	3.8	15.0
TOTAL	**100.0**	**100.0**	**100.0**	**100.0**

Including HECS

* Rounding errors

Source: 1. Dobson, IR 1995, 'What the HECS going on?', *Journal of Institutional Research in Australasia*, Vol. 4, No. 2, pp.30–40.
2. DETYA 1999, Selected Higher Education Finance Statistics 1998, AGPS, Canberra.

The funding trends mentioned by Dobson (1995) is now somewhat dated since he referred to 1993 – 1994 figures. Table 1 below updates this information to 1998 – the latest available from the Australian Government Authority.

Table 1 shows that Commonwealth funding for Australian Higher Education declined from 89.3% in 1981 to 50.8% in 1998. As previously stated, this trend is partially due to the introduction of the Higher Education Contribution Scheme that by 1998 provided 17% of all Higher Education Revenue. Further, the contributions made by students increased from 0% in 1981 to 28.3% in 1998.

Table 2 disaggregates the student contribution in terms of funding to Higher Education between 1992 and 1998. The following comments are made on the data contained in Table 2:

- Although HECS contributions have increased markedly during the 1990s, in proportional terms, the student contribution through this source actually declined between 1992 and 1998 – due to deregulation of other fee-paying programs by the Australian Government.

- It reveals very major growth rates in relative terms made by the revenue generated through continued education programs, international fee paying programs and other Australian fee paying programs, particularly postgraduate fee paying courses.

Table 2. Australian higher education % income sourced from students (academic programs)

STUDENT FUNDING SOURCES	**1992**	**1998**	**% CHANGE 1992 / 1998**
HECS	79.3	60.6	-23.6
Continuing education	1.7	2.8	+64.7
Full fee overseas	17.9	29.2	63.1
Fee paying postgraduate local students	1.1	6.4	481.8
Other local fee paying students (non-award and undergraduate)	–	1.0	NA
TOTAL STUDENT RELATED INCOME	**100.0**	**100.0**	

***Note*:**

Analysis excludes government investment / endowments and other funding sources

***Sources*:**

1. DEET 1994, *Selected Higher Education Finance and Research Expenditure Statistics 1992*, Australian Government Publishing

Service, Canberra.

2. DETY A 1999, *Selected Higher Education Finance Statistics 1998,* AGPS, Canberra.

Tables 1 and 2 taken together suggest significant declines in Government funding of Australian Higher Education coupled with significant commercialisation of academic programs; indeed by 1998, fully commercialised academic programs contributed $943 million to University coffers with partial fee paying local students providing $1.45 billion through the Higher Education Contribution Scheme.

Whilst this paper focuses on commercialisation of academic programs, it is noted that research commercialisation has also gained momentum in Australian Higher Education. For instance Kemp (2001) recently notes that many Australian Universities are already well positioned in recognising commercial opportunities and formation of industry alliances in research and innovation. It is further noted that this growing confidence is reflected in the growing proportion of Income that universities are now utilising to enhance their research and other academic activities.

Tables 1 and 2 paint a picture in terms of commercialisation of academic programs with respect to growth in funding. It is interesting to note the trends in these changes in terms of student load (equivalent full time student units). For instance, postgraduate fee paying student load has increased from approximately 7200 EFTSU in 1993 to around 24100 EFTSU in 1999 – more than trebling of such student load. Over the same period full fee paying overseas student numbers have grown from 30,600 to 74,200 – a growth of 142%.

In summary, in terms of revenue and student places, there has been a massive growth in commercialisation of academic degrees. Even in the so-called 'Government Funded Students' category an increase in student contribution to the funding of Higher Education through the Higher Education Contribution Scheme has also occurred.

Commercialisation of Degrees in the Graduate School

Because of the pressures inherent in and created by the need to commercialise academic programs, the AGSE has taken the following realities on-board. Some have exercised a direct influence and others an indirect influence on both strategies and operations.

a) Strategic refocussing of the University

Financially, commercialisation has the main benefit of universities being able to retain all funds received from students. These are then used to hire talented staff and provide better resources. A corollary to this is that those universities that are less successful in the marketing exercise tend to be worse off than under the government funding systems. This creates the 'haves' and 'have-nots' in the tertiary sector.

Hence, Swinburne University strategy is aimed at not being one of the have-nots. It has strategically positioned itself to actively seek diversified sources of funding so as to lessen reliance on Government funding. It has sought the development of an entrepreneurial culture in terms of both staff activities and student development. As regards the latter, it is the intention to encourage students to be self-employed due to increasing unemployment. Being a relatively new university, it tries to attract more research grants from industry, patents, etc. This fits in with the university's applied technological and entrepreneurial focus. Other proactive moves include the establishment of the Postgraduate Education Loans Scheme, targeted to operationalise in 2002. It is anticipated to have a positive impact on student numbers. To cater to the increasing diversity of the student population, especially in language proficiency, an English language centre has been made available to all students experiencing difficulties in the English language.

b) The Graduate School as a Strategic Business Unit

- The AGSE has taken its cue from the University's corporate strategic intent. It has positioned itself as an entrepreneurial institution, with the focus of all teaching and research being on being entrepreneurial in all endeavours. This, combined with the name change from the Swinburne Graduate School of Management to the Australian Graduate School of Entrepreneurship, is designed to put the School in a niche market, thus offering a 'boutique' rather than a 'vanilla' product.
- The effect on availability of courses has been pronounced.
  - Since the Government's posture has forced a context that courses need to pay for themselves, there is a tendency not to offer a course if it is deemed to be economically not viable. At the AGSE, this has seen programs such as the Doctor of Organisational Dynamics and Master of Organisational Dynamics close down. The results are that the large resources previously dedicated to such uneconomic course are now freed up for re-deployment, in that the community is better served by courses in demand. However, some fields of knowledge (regarded by some academics as important for their intrinsic or application value) are disappearing.
  - Another phenomenon seen is the coalescing of existing programs to produce a more viable and potentially more 'attractive' program. At the AGSE, the Master of Management, Master of International Business, the MBA (Management) and the MBA (Corporate) were closed down, and only relevant aspects were input into a new program, the Swinburne MBA. This latter is a revolutionary program that is projected to maximise benefits for the clients and for the organisations that hire them. It focuses on the new economy, and is intended to develop entrepreneurs and entrepreneurial businesses. Because it tightly focuses on such outcomes, it is expected to pay dividends in terms of student numbers, in both the domestic and international markets.

c) New realities of the professional operating core

a. Change of attitude of staff at the AGSE has become prevalent towards students in the face of the knowledge that students are paying for the course. There are both positive and negative aspects to this issue. In a positive light, most full-time staff tends to put themselves in the shoes of the fee-paying students and see students as clients who are owed a service. However, some staff feel that a few members

of the sessional staff, who come from diverse backgrounds and who may not be properly acculturated into the new School value system, may still harbour the old attitude and perceive students as a necessary evil, and such engrained attitudes would probably take years to eradicate. The School can well do without these staff.

- AGSE has also noted the widely publicised assertions in the media that there is increasing reluctance on the part of staff at many universities to fail students who have paid to do the course. This reluctance has a tendency to lower academic standards. At the AGSE, such a posture is seen to rebel against their prevailing attitudes to maintain standards. In trying to maintain standards, AGSE staff try that much harder to assist students to reach the required standards. They institute extra assignments for the weaker students, and provide feedback in varying amount of detail on student performance. Ultimately, however, students not making the grade do fail. Sometimes, as is the practice at most universities, AGSE students are allowed to resubmit a failed assignment with the proviso that, in cases of such resubmissions, the highest possible mark awarded is no higher than a bare pass mark. This is in fairness to other students who do well but might want to try to better their grade through a resubmission, which is not a practice at the AGSE.

  In addition, in response to the increasing diversification of the student population in terms of differences (cultural, learning styles, socio-economic status, religion, academic standards/achievement, etc.), AGSE has adopted a wide range of teaching and learning methods, as well as begun using different assessment methods. Staff meetings at the School often express concerns about how and when the School uses feedback from the Student Evaluation surveys. Subject convenors are interested in feedback on not only for their own subjects but also about the program as a whole. This information is now available on the web to staff. It has become the practice to alter mode of assessment from semester to semester to proactively avoid a 'black market' for assignments that has been reported to exist at some other universities, locally and abroad.
- Hardline attitudes are softening among AGSE staff towards plagiarism and subject standards in student assignments. Now, in favour of equity for fee-paying clients, questions are often asked whether instances of plagiarism and low academic standards were a result of stress, poor language skills and poor time management by international students rather than a deliberate attempt 'to defraud at any cost'. In the same vein, issues have been raised as to the advisability of mixing students with work experience with those without.

d) Client relationships

- Pastoral care

  AGSE has acknowledged that some students, especially international, need special care when they face problems, especially of a personal or family nature. Staff have been nominated to provide pastoral care.
- Cultural sensitivity

  In the past, there had been instances at the AGSE with staff who were not culturally sensitive when dealing with students. Consequently, in light of the new realities, a firm line has been taken that all students be treated equitably. Sources of advice on cultural differences/difficulties are being circulated to all staff, full-time and sessional.
- Increasing empathy towards students' economic position

Some recent studies have shown that students increasingly need to undertake part-time employment to fund their studies. Hence, in attempting to ensure equity to all students in terms of *access* and *success*, AGSE has acknowledged that fee-paying students from abroad and local ones will be facing financial difficulties time to time. Such students have been given a number of flexible payment options. Some students, whole financial status reduced due to the weakening of the Asian currencies, have had difficulties in concentrating on their studies or have had to pick up some part-time employment. These are given a sympathetic hearing.

e) Marketing orientation and tactics

AGSE has noted the following phenomena in this regard:

i. Regarding each other as competitors, universities are now keeping much closer tabs on the activities of other universities in relation to course offerings, fees charged, student pass rates, marketing, modes of student recruitment and provision of ancillary services to students. In many circumstances, as evidenced from the content of the web pages for various universities, there are both implicit and explicit statements about why the offerings of a particular university are superior to those of other universities.

ii. In some cases, the competition has resulted in some unsavoury activity in marketing and student recruitment. Anecdotally, even badmouthing of competitors has been reported to take place at the various education fairs, such as those organised by the IDP and held internationally! This has forced the establishment of a Code of Ethics by the IDP.

iii. Some respondents also reported that there is also corruption involved in the ranking systems of universities, though no verification was possible on this claim.

iv. Where it is not a case of corruption, then the very basis of such rankings is suspect from other standpoints, such as veracity, validity and reliability. For example, Asia Inc Magazine sent out the *Asia Inc MBA Survey 2000: Peer Review* in August 2000 to universities in the Asian region, soliciting responses to 'greatly enhance our ability to conduct a fair and objective ranking of top Asian MBA programs' (excerpt from covering letter). In light of the intensity of inter-university rivalry in Australia, it is questionable that a *peer* review should have been used for the avowed purpose of 'fair and objective ranking'. Next, due to bounded rationality, comes the question of how one should rank institutions with which one is not familiar. Does one rely on hearsay alone or look up yet another 'ranking' conducted by some other organisation? How reliable would these 'data' be? What is the face or content validity of the measures used by these ranking agencies? For instance, to what extent do such measures (used by this particular survey) as 'job placement process', the course's 'Asian course content' or 'modification of your Asian course content to reflect the Asian crisis' constitute valid measures of an MBA program's excellence? The next questionable aspect is the choice of the MBA programs that constitute the '80 Full Time MBA programs in Asia' that were to be ranked. One could ask how this list was drawn up. How did the ranking body select the MBA programs within a country to constitute the list for that country? For example, there are several other MBA programs running in Malaysia, and it is not clear why only the one program was selected for inclusion. In comparison, there were 31 programs from Australia!

v. 'Products' offered by a university are affected by what *other* universities are deciding in terms of content and especially entry standards. The *content* aspect has raised a serious marketing issue. Universities have begun to differentiate

themselves in various ways. For example, a given university may make itself more attractive to its clients by setting very high standards and charging very high fees, as does Melbourne University and other very large universities. The alternative is for some universities to lower academic standards to draw from a larger clientele pool. They also lower their fees to attract the price-conscious students. The question has been raised as to where in that spectrum AGSE should position itself.

In view of all these, AGSE has set up a dedicated marketing and student recruitment department. Marketing staff from the School travel internationally on student-recruitment exercises, to service and maintain their agents, and to establish networks and create awareness of AGSE's offerings. AGSE marketing staff is also involved in student recruitment locally. Hence, a plethora of marketing methods and activities is used at the AGSE, such as the following:

- *Local* marketing activity has focussed on newspaper advertisings supplemented by casual information sessions. The latter have included MBA fairs in the city. Formal information sessions, such as our popular PIEs (Postgraduate Information Sessions) have also been instituted. Other universities, such as LaTrobe, also use radio advertising for their MBA program, and most have set up web sites. The issues here relate to the recent introduction of fees for MBAs. The initial reluctance among local postgraduate applicants to pay, however, later led to student acceptance numbers increasing. Local postgraduate students are now regarded as valued clients and marketing efforts are focused more on the local students.
- *International* marketing relies largely on the presence and activities of the university's International Students Unit (ISU) at educational fairs. It also relies on agencies, such as the IDP and private ones, set up in a number of countries. However, in India, standards seemed to be compromised 50 per cent of the time, leading to various positive and negative long-term effects. There is a need to set up standards for selection of students in that country. Should AGSE's acceptance cut-off level be 2^{nd} class degrees from top Indian universities and 1^{st} class degrees from the 'also-ran' tertiary institutions?

f) Agency relationships

- Anecdotal reports from some universities indicate that the activities of some recruitment agents appointed in other countries have been found to be either wanting or less than wholesome. Understanding the competitive nature of tertiary education, some agents have chosen to manipulate for their own ends the rival institutions employing their services. Institutions that pay handsome commissions to these agents are recommended very highly to students, and the rest either ignored or even bad-mouthed. Other anecdotal reports indicate some agents have even asked for 'paid holidays' for themselves in Australia. Some dishonest agents, in trying to boost numbers of students to their favoured universities, have even resorted to falsifying students' academic and other documents. For instance, the Australian Visa Office in New Delhi reportedly had to come down hard on some agents, and police action was also initiated. Thus, AGSE has had to tread carefully in their handling of its appointed agents, relying mainly on the IDP and very few privately appointed agents.

g) Other variables

Other efforts at the AGSE to grow and to increase revenue have included the following:

- AGSE has established industry linkages to look at corporate entrepreneurships, family entrepreneurships, and venture capitalist activity.
- The positioning of the MBA and the development of its variations are the subject of a recent review.

Discussion and Conclusion

Due to a number of external environmental factors, Australian universities increasingly need to commercialise their teaching and research programs and develop an entrepreneurial culture in order to survive and prosper in the new competitive world of the 21st century. A conceptual framework for examining this study was developed in figure 1. Such a design may be equally applicable to other countries when considering adaptive responses to external stimuli facing higher education. The forces facing Australian higher education may also be in place in other countries where the massification of this educational sector leads to governments requiring alternative funding sources to the public purse.

In system-wide terms, the Australian higher education response to the slowing down of revenue flows from Canberra has been to increase contributions made by local students to their education. The Government's justification for HECS – a scheme for deferred student contribution to their studies- is that there are significant private benefits flowing from higher education (for instance through increased earning capacities of graduates) and hence a move towards greater 'user pays' is justified. Australian universities have also increased the proportion of non-government income through greater attention to continuing education and fee-paying programs offered to local and international students.

At the academic organisational unit level, the quest for funding has led to the evolution of entrepreneurial approaches in curriculum development, marketing, development of alternative client-related executive development packages, industry linkages, client relationships and development of unique corporate images. The impacts have been positive, such as an increase in quality products due to inter-university rivalry intensifying, as well as negative.

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