DETERMINING MEASURES OF EFFECTIVENESS FOR NEW ZEALAND POLYTECHNICS.

A thesis presented in partial fulfilment
of the requirements of
Master of Business Studies
Massey University

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1995.

ABSTRACT

This research is a first step toward developing a model which New Zealand polytechnics can use to monitor and measure their own effectiveness. The study breaks new ground in the New Zealand context (which consists of a wide variety of institutions in terms of size, location, and programmes) and extends North American, British and Australian research in the area. The literature review identifies issues in measuring effectiveness, and the strengths and weaknesses of various models used. For this research, a strategic constituencies model was adopted involving major stakeholder groups whose opinions were sought about measuring the effectiveness of their polytechnic. Research subjects were asked to evaluate "Domains of effectiveness" (resulting from prior research) which included: student educational satisfaction; student academic development; student career development; student personal development; staff employment satisfaction; professional development and quality of staff; system openness and community interaction; ability to acquire resources; and organisational health. A tenth domain, social responsibility, was added.

Stakeholder opinion on the relevance of these domains for evaluating effectiveness was obtained. They were also asked to rank the importance of each domain from their particular stakeholder stance. No new domains were identified by stakeholders but there is clear evidence that different stakeholders prioritise each domain differently which is in line with the strategic constituencies model of organisational effectiveness.

The research provides a framework for other polytechnics to monitor and measure their own effectiveness and a base for further research in these and similar organisations.

ACKNOWLEDGMENTS

Many people have contributed to the completion of this thesis. My supervisors, Glenys Paterson and Stuart Thomson have provided invaluable assistance, advice and support. The assistance of Professor Tony Vitalis, particularly in the development of the questionnaire, was much appreciated.

My thanks are extended to the CEO of Manukau Polytechnic Bob Willyams, the CEO of Tairawhiti Polytechnic Rosemary Middleton and the CEO of Hawke's Bay Polytechnic Bruce Martin, for their support of this work and their willingness to give me access to staff, students, advisory groups and council members of their institutions. Within those polytechnics I thank Ann Deans and Mark Chapman of Tairawhiti, and Eric Holmberg and Jo Haswell of Manukau for acting as liaison points for the distribution and collection of survey forms.

Within the secondary school sector I would extend my thanks to Bali Haque Principal of Tamatea High School, the Principal of Gisborne Girls High School, the Principal of Papakura High School and Mike Kilty Principal of Taradale High School for allowing me access to the students of their schools. My thanks must also go to the staff at both secondary schools and polytechnics who administered the questionnaire on my behalf.

My gratitude goes to Bruce Martin and Neville Withers of Hawkes Bay Polytechnic for their support by providing me with the resources for this research in terms of financial assistance, leave and access to technical resources.

To my long suffering family who have seen very little of me during this work - my thanks for your support and patience.

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CHAPTER ONE
INTRODUCTION

In recent years, the New Zealand tertiary education sector has suffered from economic constraint in the same way as its counterparts in much of the western world. Following the second world war, western economies grew rapidly, and investment in education rose to high levels. Post war baby booms in many of these countries resulted in growth in the number and size of educational institutions. With a contraction in world economies over the past fifteen years however, and with a general move internationally away from the more liberal policies of the sixties and seventies, education spending has been under threat. Current developments in Britain, the Netherlands and Australia have much in common (Dochy 1990) and are also reflected in the New Zealand situation:

* Calls for new management techniques as a result of the economic situation and government cutbacks in expenditure.

* Higher education institutes called upon to justify themselves - their purpose, methods, resourcing and responsibilities to society.

* Moves towards greater autonomy of individual institutions, accompanied by a more direct level of government control.

* Public assertions, re-stated in the political arena, that universities are inefficient.

* Release of government papers (within a very close time frame in all four countries) concerning the operation of higher education.

* Calls by government for the urgent development of performance indicators.

The demands of society today have also changed. Technological development means that there is no longer the need for a large pool of unskilled labour. Education systems have been challenged to re-educate those affected into the new requirements of the technological age, but structural unemployment is now a reality in many countries. The education system has in many ways become the scapegoat

of government - a perfect whipping boy to blame for the unskilled, unemployed and, in many cases, unemployable work force-in-waiting.

As with many other sectors of government social spending there is a demand in education for increased accountability. Structural changes in tertiary education have now created an environment where individual institutions are required to take more direct control over their activities. There is no doubt that "more effective, efficient and entrepreneurial behaviour will be required if universities, polytechnics, colleges and institutes are to prosper in the environment of the 1990's" (Kells 1990, p. 265).

The answer promoted by many, particularly those in government, has been centred on the development of performance indicators. As the tertiary sector itself has not developed these, they have been imposed by those requiring the information, and tend to be of a form that meets the needs of the external body requiring the information in the simplest and quickest manner. However Smith (1992, p. 94) notes when referring to the trend from outside groups for productivity measures from universities that "It is easy to measure the wrong thing". Kells (1990) points out that United States universities have only themselves to blame for the imposition of what are seen as inadequate performance indicators as the measure of their effectiveness. By failing to provide information about their own effectiveness and efficiency, so the requirements they are obliged to meet have not been of their own making.

Cave et al (1988, 1991) reviewed the use of performance indicators in Britain and came to the conclusion that the performance indicators developed were not only crude in form, but failed to give balanced information. A list of fourteen indicators were developed for teaching and research areas but failed to guide the development of an integrated approach (Kells 1990). In 1986 The Joint Committee of Vice Chancellors and Principals and the University Grants Committee (CVCP/UGC) Performance Indicators Steering Group produced their first publication and prefaced the document with the following warning:

> This publication should bear the following warning to all users, whether in government, universities or elsewhere:

> Uncritical use of these indicators may seriously damage the health of your university.

The same pressure to use performance indicators is occurring in New Zealand tertiary education. There have been listings of performance indicators issued by the Ministry of Education and Treasury, and institutions are required to report on some of them. APNZ (Association of Polytechnics in New Zealand) announced late in 1993 that it was investigating the development of performance indicators for the polytechnic sector. Unless the tertiary sector is proactive in identifying a cohesive, practical and defensible model for identifying and measuring the effectiveness of its institutions, it runs the risk of having a system imposed on it which does not accurately assess or measure its real effectiveness. The risks and dangers implicit in the dependence on performance indicators is too well documented to ignore (Harris and Dochy 1989; Dochy et al 1989; Cave et al 1988).

Relevant research has been conducted overseas on the identification, measurement and monitoring of effectiveness. This thesis compares and contrasts the various models which have been developed and draws on the results of effectiveness research in tertiary education in the United States, Britain and Australia. While major advances in the identification of relevant domains of effectiveness in tertiary education have been made (Cameron 1986, Lysons and Ryder 1988, Lysons 1990, Lysons and Hatherly 1993), the source of the research data was limited to senior academics and administrators.

This research expands on the work of Cameron, Lysons, Ryder and Hatherly. In particular it uses their criteria of effectiveness to establish the importance for other stakeholder groups, including students, employers and members of the community, and all staff. The strategic constituencies model states that the effectiveness of an organisation is determined by all its major internal and external stakeholders, each of which will have their own set of evaluative criteria. Four major stakeholders are surveyed for two main reasons:

1. To assess whether the domains identified in overseas research are relevant for measuring effectiveness in New Zealand polytechnics.
2. To determine whether there is variation in the priority attached to each domain by different stakeholder groups.

Three New Zealand Polytechnics were used in this research. Each represented a different type of polytechnic - a large urban based polytechnic, a medium sized urban provincial polytechnic, and a small semi-rural polytechnic. In each of the polytechnics, four stakeholder groups were surveyed - polytechnic students, polytechnic staff, industry and community members and potential students.

CHAPTER TWO
RESEARCH OBJECTIVES AND METHOD

2.1 OBJECTIVES

The primary objective of this research was to identify:

i. The organisational domains contributing to the overall effectiveness of New Zealand polytechnics.

ii Those particular factors which are predictive of effectiveness in New Zealand polytechnics.

iii. The relevance of overseas research findings to the New Zealand context.

Research identifies nine domains, or groupings of factors which are indicative of organisational effectiveness (Cameron 1978, 1981, 1982, 1986A; Cameron and Whetton 1983; Lysons and Ryder 1988; Lysons 1990):

1 Student educational satisfaction
2 Student academic development
3 Student career development
4 Student personal development
5 Staff employment satisfaction
6 Professional development and quality of staff
7 System openness and community interaction
8 Ability to acquire resources
9 Organisational health

These domains were adopted for this study of effectiveness in the New Zealand Polytechnic environment. A tenth domain, "social responsibility", was added after identifying this as a domain potentially relevant in the New Zealand context.

The strategic constituencies model of organisational effectiveness proposes that members of each constituent group will vary in their evaluation of the importance of a domain. For example, staff members may evaluate the domain of "staff satisfaction with employment" as far more important than the domain of "student career

development". In contrast, industry and community groups may make the opposite evaluation.

A second objective was to assess whether there was variation in ranking the importance of the domains across four constituent groups.

Each domain can be represented by a series of indicator statements. For instance, the domain of "student career development" is represented by three indicator statements: the polytechnic provides career development opportunities for students; most graduating students get a job; and most students attend the polytechnic with definite career goals as opposed to attending for financial or other reasons.

A third objective was to determine whether the indicator statements presented to research subjects were the indicators of effectiveness for that domain.

To be of any use, the indicator statements must accurately reflect the domain they represent. For instance, when looking at the domain of "social responsibility", three indicator statements were identified - one reflecting gender issues, one related to ethnic balance and one related to disadvantaged groups. Noting the similarity between the grades allocated for each individual indicator will be one way of determining whether the indicator statements reflect the domain. A second way will be to look at the ranking of the indicator statements against the ranking of the domain statement by those surveyed.

The following research propositions were established:

1 That there is a series of measurable domains of effectiveness which can be used to provide an overall assessment of organisational effectiveness in New Zealand polytechnics.

2 That different constituent groups attach different levels of priority to rank each domain of effectiveness.

3 That each domain is represented by a series of indicator statements which constituent groups use when making judgements as to the effectiveness of the organisation.

This study extends the work of other researchers who limited the focus of their studies to senior academics and administrators within the institutions (Cameron 1978, 1981, 1982; Cameron and Whetton 1983; Lysons and Ryder 1988; Lysons 1990). The research sets out to establish whether the domains of effectiveness identified are valid across a wider range of constituent groups including all staff, internal students, potential students and industry and community groups.

2.2 Research Method

2.2.1 Sample Selection

Four groups were identified as significant constituencies of polytechnics: two internal groups and two external groups. The groups selected were considered to be the primary four strategic constituencies, representative of both internal and external perspectives. The four groups were:
Polytechnics students
Polytechnic staff
Industry / Community members
Future students

The polytechnic sector in New Zealand consists of a wide range of institutions in terms of size, and, to a lesser extent, programmes offered. It was therefore important to survey a cross section of institutions. Three polytechnics were selected:

Tairawhiti Polytechnic, Gisborne; representing the smaller, semi-rural based polytechnics.
Hawke's Bay Polytechnic, Napier; representing a typical average sized polytechnic, urban based and provincial.
Manukau Polytechnic, Auckland; representing a large city based polytechnic, operating in competition with other tertiary institutions in the same city.

As the polytechnic sector in New Zealand varies greatly in size and geographic location, it was important that these differences were reflected in the polytechnics studied. It was expected that some regional differences would be noted given that the different profile of each polytechnic may mean that in the eyes of each constituent

group surveyed, it has a different role. It was also expected that this difference would not be great.

2.2.2 Questionnaire Construction

A questionnaire was adopted from a format used in overseas research (Cameron 1978, 1981, 1982; Cameron and Whetton 1983; Lysons and Ryder 1988; Lysons 1990). It was constructed on the basis of the nine identified domains of effectiveness in institutions of higher education, with one additional domain, social responsibility. This domain was added as it was believed that equity issues are already identified in the objectives, goals and performance criteria of the polytechnic system. To ignore social responsibility as a domain would be to ignore a regularly stated desired outcome of the polytechnic system.

The questionnaire consisted of 51 questions and statements (see Appendix A). A ranking scale of 1 - 5 was used:

1: Of no importance
2: Important
3: Quite important
4: Very important
5: Of critical importance

Of the 51 statements, 49 required a response using this scale. Space was left on the form to add any other factors that respondents felt were important in determining effectiveness. The first two questions provided statistical information regarding the background of the respondent. Apart from the questions seeking statistical information, the questionnaire was identical for the four different constituent groups surveyed.

The statements were presented to subjects in eleven groups. The first ten were titled with the domain of effectiveness to which the statements referred. The eleventh, and final block of statements (numbers 43 - 51) asked the respondent to rank each domain as a whole, see Table One.

Table One: Domains of Effectiveness Represented in the Survey

Domain	Statement Number(s)
Student educational satisfaction	3 - 5, 43.
Student academic development	6 - 10, 44
Student career development	11 - 13, 45
Student personal development	17, 46
Staff employment satisfaction	14 - 16, 47
Professional development and quality of staff	18 - 23, 48
System openness and community interaction	24 - 26, 49
Ability to acquire resources	27 - 29, 50
Social responsibility	30 - 32
Organisational health	33 - 42, 51

Prior to circulation, the questionnaire was piloted on three small representative groups - secondary school students, polytechnic staff and community members. As a result three questions were rephrased, and changes were made to the wording of the explanation and instructions.

2.2.3 Survey Distribution

A slightly different approach was required in the distribution and receipt of the questionnaires for each of the four constituent groups.

Secondary School Students.

In each polytechnic district two secondary schools were contacted by letter (see Appendix B) and asked to participate in the study. In the case of Gisborne, one positive response was received. In the case of South Auckland, two negative responses were received and as a result two further schools were contacted first by phone, then with a follow up fax. One of these schools agreed to be part of the study. In Hawke's Bay both initial contacts were positive.

A visit was made to each institution and a discussion took place with the principal outlining the nature of the study. Questionnaires were left with the principal for

distribution to staff. They were packaged in groups of twenty, each with a cover sheet of instructions for each staff member (see Appendix C). In South Auckland and Gisborne self addressed courier packs were left for the return of completed questionnaires. In the case of the Hawke's Bay schools, a contact phone number was given and the forms were collected directly from the schools. Senior secondary school students (Form 5 and above) were surveyed.

Polytechnic Students.

A letter was sent to the Chief Executive Officer (CEO) of both Manukau Polytechnic and Tairawhiti Polytechnic asking for permission to access the various groups in the polytechnics for the purposes of the survey (see Appendix D). In both cases, discussions had already taken place between the CEO and the researcher and agreement in principle had been reached. With Hawke's Bay Polytechnic, no letter was sent; agreement was based on the oral support of the CEO.

In visits to Manukau Polytechnic and Tairawhiti polytechnics, the researcher was able to distribute the survey forms in class sets of twenty, each with an instruction sheet (Appendix E) to a cross-section of faculties and programmes. In both cases, courier return paid envelopes were also provided for the return of the survey forms. For Hawke's Bay Polytechnic, the packaged forms were issued directly to a cross section of programmes, and returned directly.

Polytechnic Staff.

The permission gained for access to polytechnic students extended to this group. In all three institutions, access to staff is through pigeonholes located in central staff room areas.

Tairawhiti Polytechnic: Because of the smaller staff numbers, every pigeonhole in this polytechnic was issued with a form. The respondents were asked to return the form to a colleague in the polytechnic, who was provided with return paid courier bags.

Manukau Polytechnic: The large numbers of staff required a sampling system. The pigeonhole system was set up on a departmental basis, so sampling was achieved by posting forms in pigeonholes across all departments - teaching and non teaching,

proportionate with the size of the department. Return of the forms was by way of a return paid envelope attached to each survey form.

Hawke's Bay Polytechnic: A distribution system similar to that for Manukau Polytechnic was used, with the exception of the return system which involved two options: either direct return to the researcher's pigeonhole, or placement in a sealed box, clearly marked and left in the staff room.

Industry / Community Members.

This constituency group consisted of three groups:
Group One: consisted of advisory committee and council members of each of the three polytechnics. Each council, and a cross section of advisory groups from different programmes in each polytechnic, was sent a questionnaire with a covering letter (see Appendix F), and a return paid envelope attached.

Group Two: was accessed through group one. The mail out to group one members included a second questionnaire and envelope, and the covering letter asked them to hand the second questionnaire on to a friend or colleague who preferably did not have direct links with the polytechnic.

Group Three: was accessed through the secondary school students. After completing the secondary school student survey, students were given a second form with a reply paid envelope and asked to hand this to a parent or care giver to complete. Instructions were included on the cover sheet given to the secondary school staff member who was issuing the survey forms to the students.

Summary

This chapter defines the objectives of this research, and establishes the methodology used. The construction of the questionnaire and the distribution of the survey are explained. The following chapter explains the place of polytechnics in the New Zealand tertiary education sector. Chapter four review the concept of effectiveness. It provides the reader with an overview of effectiveness models, and justifies the use of both the survey instrument and the survey distribution.

CHAPTER THREE
THE POLYTECHNIC SECTOR IN NEW ZEALAND

3.1 An Overview of New Zealand Polytechnics

New Zealand has thirty nine government funded tertiary institutions - seven universities, five colleges of education, twenty five polytechnics and two Wananga. They range in size from Auckland University with 19,525 EFTS (equivalent full time students) to Te Wananga O Raukawa with 137 EFTS (1995 figures). Of the 139,974 government funded places, the universities account for 78,014 (or 56%), the polytechnics account for 54,395 (or 39%,) the colleges of education 7092 (or 5%) and the Wananga 473 (0.3%). See Figure I.

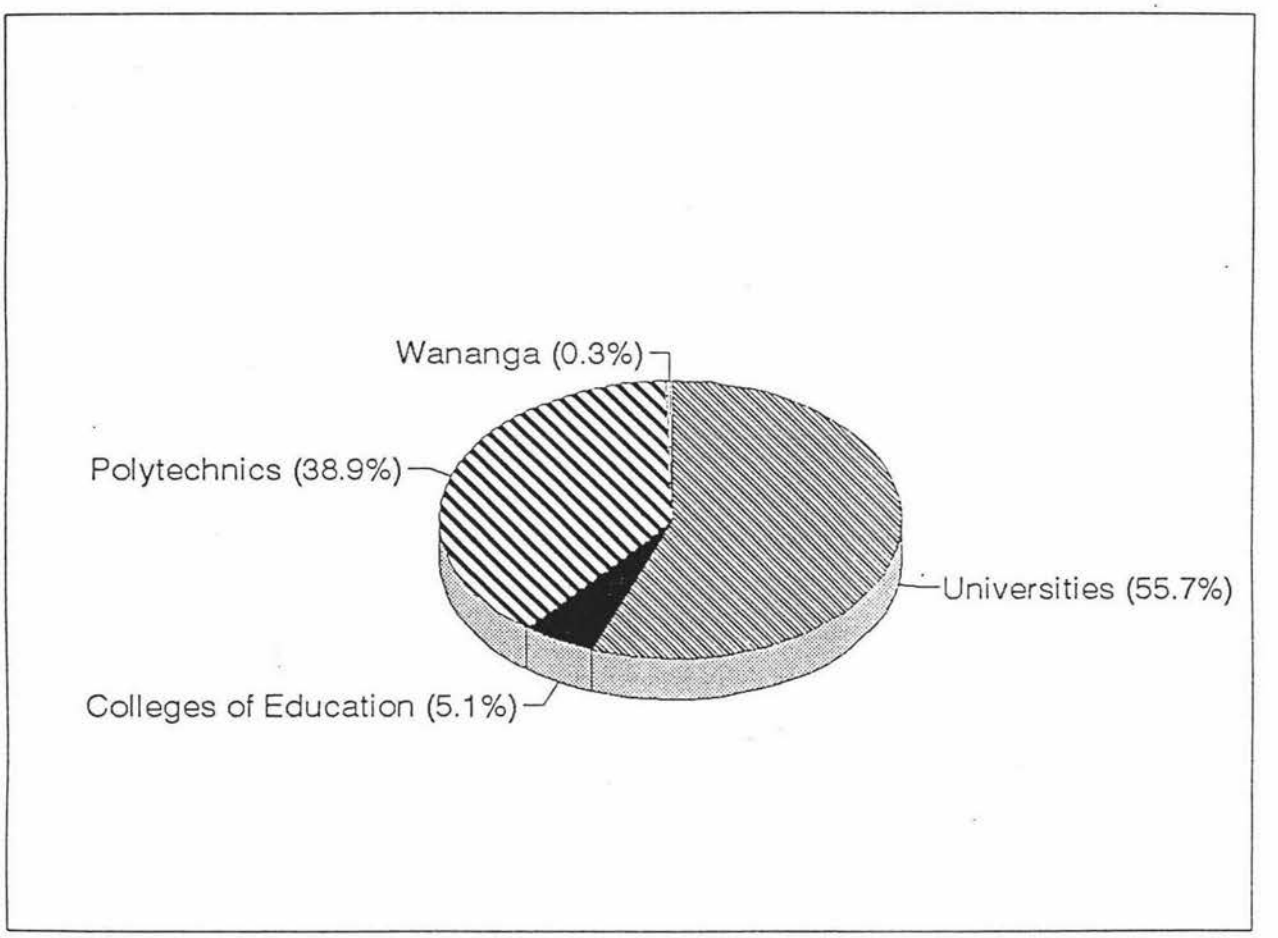
The universities fill the traditional niche of such institutions internationally. The vast majority of the their programmes are at a minimum of degree level and research is a built in function. Most offer primarily internal delivery systems, with one major provider of extramural education.

The colleges of education provide teacher training for pre-school, primary and secondary schools. Some have established links with universities and student teachers earn credits towards a university degree while at the college of education. Programmes are usually between one and three years long, depending on the style of training being undertaken and the previous academic history of the trainee. Some part time and distance education programmes are available for teachers wishing to upskill, and in the pre-school training area.

Since 1993, Wananga, a new form of tertiary institution catering primarily for Maori, have been allocated government funding in the form of EFTS on the same basis as other tertiary institutions. Prior to 1993, these Wananga were funded through other mechanisms and were of a very small size.

The Polytechnic sector in New Zealand fills a set of niches covered by a wider variety of institutions in other countries. Polytechnics grew out of the Technical Colleges and Community Colleges of the 1960s and 1970s. The technical colleges provided trade based training in local areas, and were often linked to the secondary sector. The community colleges, first set up in the 1970s, provided hobby, craft, art

Figure I: 1995 Tertiary Sector Funding



and personal development education on demand to local communities. Most major centres had either one or the other. Some of the larger urban centres had both. In the mid 1980s all such institutions were put under the collective umbrella term of polytechnics.

The New Zealand polytechnic sector now includes a very wide range of institutions, and covers an equally wide range of training and education. Most of the larger institutions have developed degree programmes, particularly in the areas of business studies and information technology Other polytechnics have developed degrees in areas that are their specialist niche - graphic design, for example. The degree developments tend to be more applied in nature than the traditional university degree, reflecting the roots of the polytechnic system. The move towards degree and degree level study is common to the entire sector, with some polytechnics opting for developing partnerships with existing degree providers - both universities and other polytechnics - and offering first and sometimes second year degree study. Other polytechnics, particularly those that are smaller and more rural based, do not offer degree level study and concentrate on the trade and vocational training for which they were originally set up. The American equivalent of the New Zealand polytechnic would be the Community College while the British equivalent is close to their College of Higher Education and College of Further Education. The New Zealand sector is however far more diverse than either of these 'equivalents'. The institutions vary in size far more - from the Auckland Institute of Technology (AIT) with 7256 EFTS, concentrating on higher level programmes, up to and including post graduate study, to Telford Rural Polytechnic which offers primarily agricultural and trade vocational programmes with a total of 146 EFTS (1995 figures - see Figure II).

Polytechnics are located in most major cities, and what they offer also varies with the nature of the competition they face. It is interesting to note that those polytechnics located in larger university cities have been more pro-active and advanced in moving into degree level studies. More regionally based polytechnics, with no direct competition from other tertiary institutions, have only recently started to look at degree programmes. To date they have concentrated on the programmes more traditionally offered by polytechnics.

Figure II: Bulk Funding Allocations
New Zealand Polytechnics 1992 - 1995

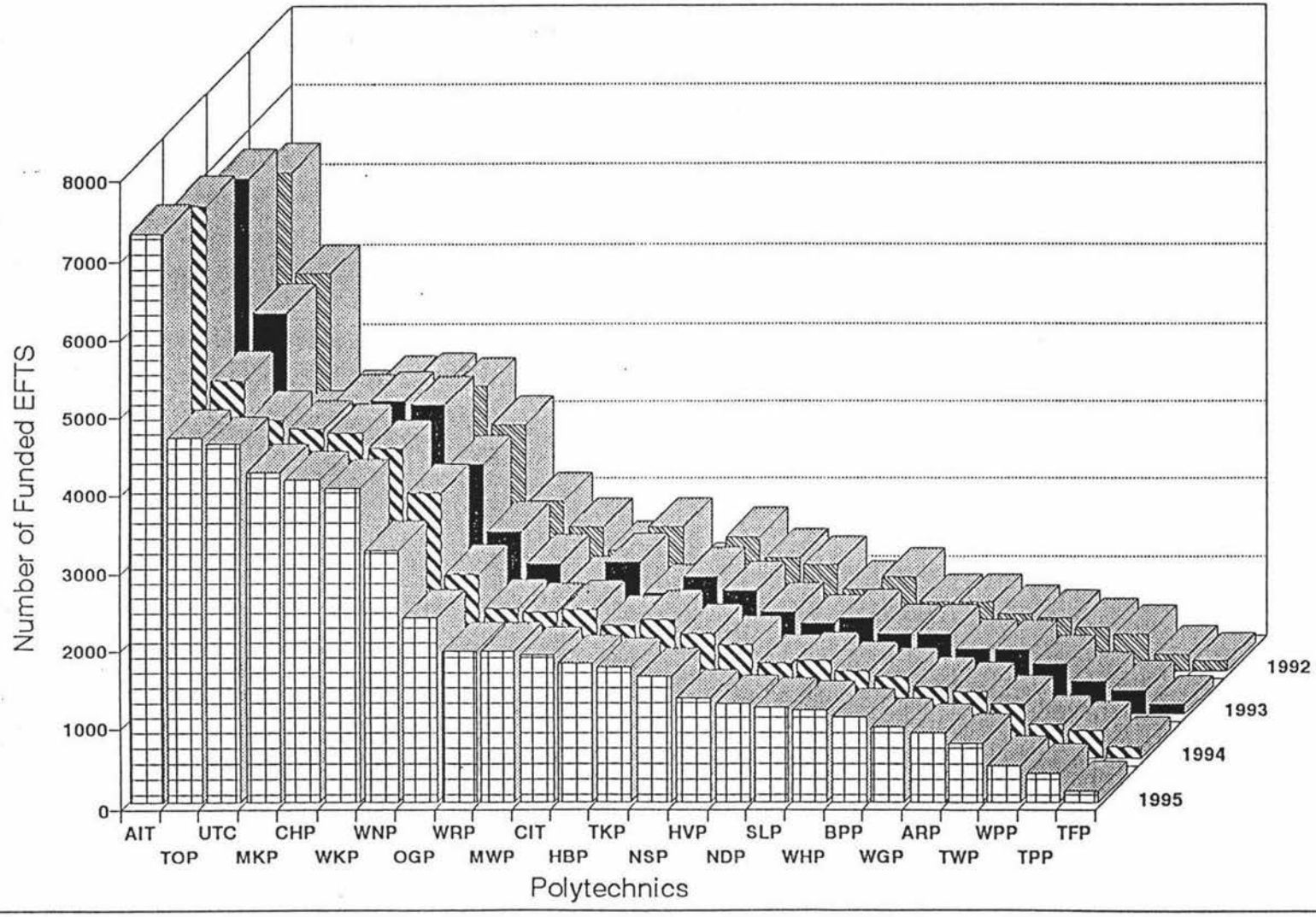


Figure II: Legend

	AIT:	Auckland Institute of Technology
	ARP:	Aoraki Polytechnic
	BPP:	Bay of Plenty Polytechnic
	CHP:	Christchurch Polytechnic
	CIT:	Central Institute of Technology
*	HBP:	Hawke's Bay Polytechnic
	HVP:	Hutt Valley Polytechnic
*	MKP:	Manukau Polytechnic
	MWP:	Manawatu Polytechnic
	NDP:	Northland Polytechnic
	NSP:	Nelson Polytechnic
	OGP:	Otago Polytechnic
	TOP:	The Open Polytechnic of New Zealand
	SLP:	Southland Polytechnic
	TFP:	Telford Rural Polytechnic
	TKP:	Taranaki Polytechnic
	TPP:	Tai Poutini Polytechnic
*	TWP:	Tairawhiti Polytechnic
	UTC:	UNITEC Institute of Technology
	WGP:	Wanganui Regional Community Polytechnic
	WHP:	Whitireia Polytechnic
	WKP:	The Waikato Polytechnic
	WNP:	Wellington Polytechnic
	WPP:	Wairarapa Community Polytechnic
	WRP:	Waiariki Polytechnic.

* Used in this study

The New Zealand polytechnic sector has undergone massive structural change over the past four years heralded with the publication of a study undertaken by Professor Gary Hawke at the request of the government of the day. The main findings of this study were published in a report which was open briefly for comment (Hawke 1988). Cabinet, after considering its stance, published "Learning for Life: Education

and Training Beyond the Age of Fifteen" in 1989, with a follow up which included policy decisions later in the year (Ministry of Education 1989).

Until the impact of 'Learning for Life', the polytechnic sector was funded under a centralised system in a manner similar to New Zealand secondary schools. The operating budgets given to the control of the polytechnic sector were small with most costs paid centrally from the Ministry of Education in Wellington. Growth in the sector was seemingly random with little if any long term planning needed or in evidence. The normal system for the allocation of growth was on a percentage basis across all institutions. This system precluded identification of needs and priorities, and allowed large institutions to grow more quickly seemingly at the expense of real needs in smaller institutions.

'Learning for Life' created an environment which gave each institution considerably more autonomy and control through the bulk funding system which had been used to resource only universities in the past. The system requires the institution to identify its expected student numbers in various pre-determined cost categories. The institution would then negotiate with the government to be funded for the requested amount of student places. The government then 'bulk funded' each institution based on the agreed level of students (known as EFTS: equivalent full time students). Each institution was then responsible for meeting student targets within its allocated funds. For the universities, the main change was that whereas in the past they had been funded for their student places, with no real restrictions on growth, now they had to bid for student places along with the colleges of education, the polytechnics and the Wananga.

The polytechnics and the colleges of education found themselves in a very different environment. They now had responsibility for all costs. What they did not have was a way of identifying many of the costs that had previously been paid directly through the Ministry of Education. Items such as salaries, power and heating etc., had never been the responsibility of the individual institution and there were no mechanisms or systems in place to identify and budget for these accurately. A typical example of the changed environment was equipment purchases for new programmes. In the centralised system the new programme approval request to the Ministry included an equipment purchase request. The Ministry provided extra funds to set up the programme with the required equipment. Polytechnics that had

developed technology based programmes under this system were at an advantage as the Ministry provided the extra funds to purchase the equipment.

Under bulk funding, all new programme costs have to be met through the EFTS (equivalent full time student) funding system. Capital developments now have to be funded independently by each organisation, using a capital component built into the funding formula. This standard formula system for capital development takes no account of existing resources and developments, and perpetuates any existing inequities in resourcing.

The net result of the change was a massive strain on the systems of all polytechnics. The information requirements of the new systems created the need for data collection and measurement previously not required. Many institutions moved into restructuring rounds, developing a corporate infrastructure capable of working in the new environment. Further pressure was created by the cut back in government expenditure on tertiary education. All tertiary providers became competitors for an increasingly limited resource. Growth in student numbers was restricted, and one institution could only gain at the expense of another. The monopoly on open growth by the universities was broken. A further restriction occurs as each year the funding paid by the government on a per student basis is cut back. The confirmation of the recommendations of the Todd Report in January 1995 provides a firmer planning base, but in the knowledge that the government funding per EFTS will continue to decline for several years.

Larger institutions with their implicit economies of scale have managed better, but some of the smaller institutions have reached critical situations. This has happened to the point where the government has had to soften its stance and introduce a basic infrastructure grant to smaller institutions, in order that they remain viable.

Opinion is mixed as to long term government policy on this matter. It is clear that some of the smaller institutions - Telford, Tai Poutini, Tairawhiti and Wairarapa - may never be economically viable under the present system which promises further cuts, not increases, per EFTS. However, it is unlikely that any government would tolerate the political backlash from sometimes politically marginal regions that would result from the closure of one or more of these smaller centres. The infra-structure grant is a sign of the political sensitivity of such areas.

Performance indicators have not been fully developed for the sector, though some are already in use The most critical indicator used to date has been the capacity of the institution to meet its EFTS targets. Internal profit and loss, and levels of reserves are now an increasing focus of organisations. Effectiveness is regarded as a financially auditable factor, with emphasis on the achievement of pre-determined quantifiable objectives in annual reporting.

3.2 THE POLYTECHNIC SAMPLE

It was important that the polytechnics in the study provided a reasonable representation of the diversity in size and location of the New Zealand polytechnic sector as a whole. This section provides a background of each of the three selected to further explain the diversity of the sector, and to provide a better understanding of the activities the sector is involved in. Figure III shows the change in government - funded student numbers over the past four years in all three institutions and gives an indication of the variation in size between them.

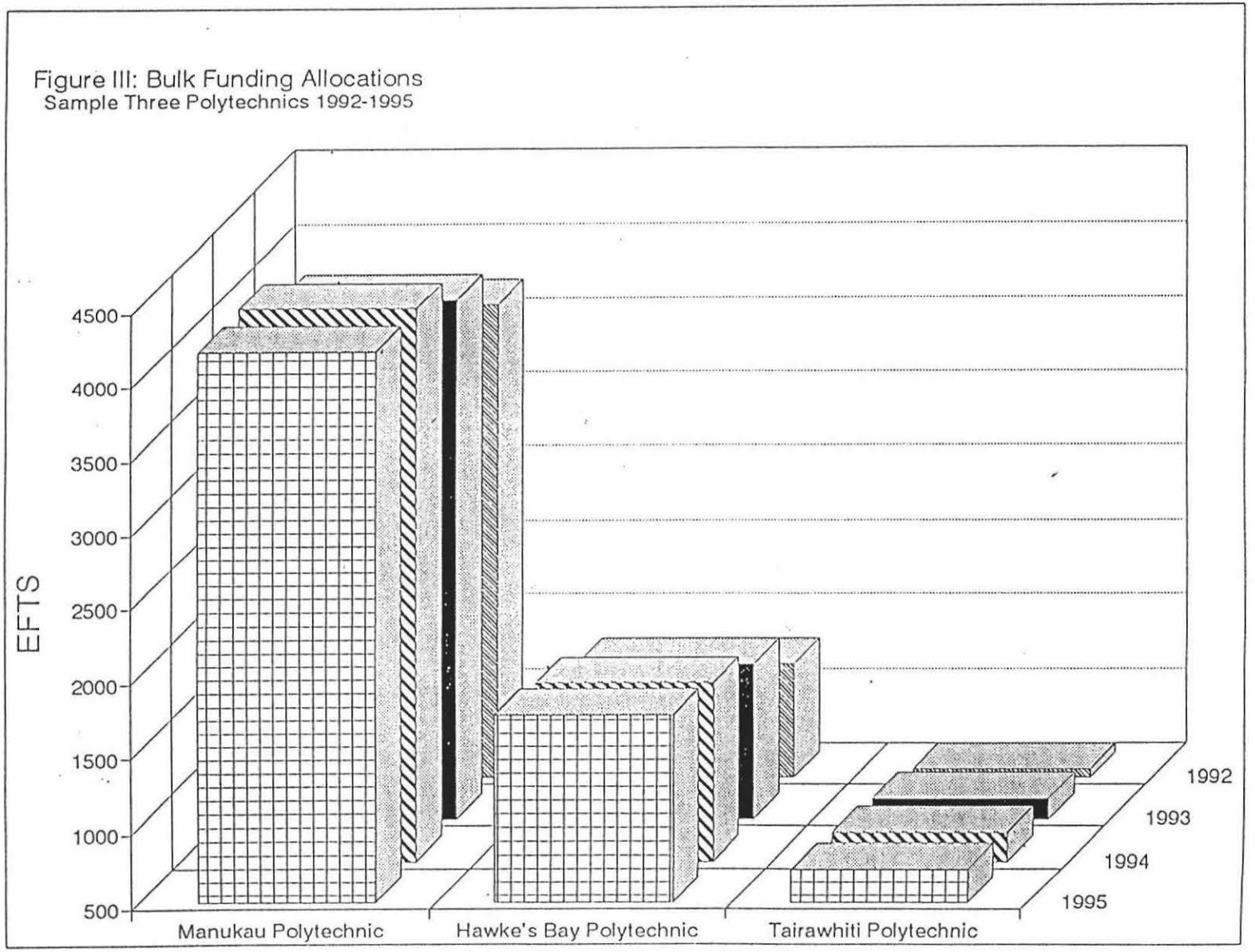
As well as government funded EFTS activity, polytechnics are also involved in a range of other activities. These activities are a secondary source of income for the polytechnics involved.

International Students: a new and growing market, drawn primarily from Asia. Numbers have grown rapidly, but they are still a small proportion of total activity. All three polytechnics have been involved in marketing their programmes internationally.

LINKS: a government funded programme designed for secondary school students to give them a taste, or link into on-going training. Because of higher infrastructure costs than competitors, the polytechnics have won smaller amounts of this training over recent years.

TOP (previously Access): A government funded scheme for training those unemployed who have a minimum of qualifications and / or have been unemployed

Figure III: Bulk Funding Allocations
Sample Three Polytechnics 1992-1995



long term. This has been a reducing role in polytechnic activity, as policy on identifying trainers has moved most delivery from the polytechnic sector to private training providers.

Entrepreneurial activities: A variety of relatively small scale activities, but with potential to become a significant income earner for the polytechnics. These activities include: programmes that do not meet EFTS funding requirements (eg. industry based training); short term contract activity; and licensed franchised activities.

Manukau Polytechnic

Manukau Polytechnic was established in 1970 to meet the needs of the expanding population of southern Auckland. Starting with twelve staff and one multi - storey building it has grown rapidly to be one of the largest in New Zealand.

Manukau is a typical example of a large urban polytechnic, working in a location where there are other tertiary institutions creating potentially a more competitive environment. In the case of Manukau, there are two other large polytechnics (AIT, the largest in the country, and UNITEC, previously Carrington Polytechnic), as well as the Auckland College of Education, Auckland University and Massey University Albany Campus. The polytechnic has two main campuses with several smaller centres located in and around the Auckland region.

With a full time staff of 457 and an estimated 569 part time staff, the polytechnic runs on an annual operating budget of $33m. In 1994 the polytechnic ran 94 full time and approximately 1000 part time courses, a total of 4215 EFTS.

The polytechnic is structured into four teaching faculties:

	EFTS
Faculty of Arts:	1332
Faculty of Business:	1236
Faculty of Health Studies:	437
Faculty of Technology:	939
Total:	3944

Note: 1993 figures are used here.

Tairawhiti Polytechnic

Located in Gisborne, this institute is typical of the smaller more rural based polytechnics. In an area typified by high unemployment and low socioeconomic based communities, this institution is the sole provider of tertiary training opportunities to a population geographically remote from the rest of New Zealand. Tairawhiti Polytechnic is based primarily in the central city in a newly built campus. It also operates small centres in Wairoa and on the East Coast (Ruatoria).

The increased costs of higher education lead to increased demands on such polytechnics to provide an increasingly high level of tertiary education. Tairawhiti has responded to this challenge in a similar way to Hawke's Bay, by entering into conjoint programme partnerships with other institutions - in this case Waikato University - to allow local students to complete at least one year of university study before facing the added costs of moving out of the community.

The polytechnic runs its programmes in four sectors:

	EFTS
Rural Studies Sector:	82
Business and Office Technology Sector:	174
General Vocational Sector:	316
Community and General Studies Sector:	256
Total:	828

Note: 1993 figures are used here.

Hawke's Bay Polytechnic

Hawke's Bay Polytechnic began in 1975 as the Hawke's Bay Community College - the first such college in New Zealand. It provided programmes in two broad fields - vocational trade training, and community and arts programmes. These two fields are still an important part of the polytechnic's activity, but are no longer the focal point. In 1987 the Community College, along with other similarly named institutions nation wide, adopted the title 'polytechnic' - literally meaning 'many schools'.

Over the past four years the CEO and council have mounted considerable political pressure - very effectively as it turned out - and the institution has attracted considerably more growth than the national average. Indeed it is more than half as big again as it was three years ago. This growth has placed a great deal of strain on all systems and processes. The polytechnic now is of an average size by New Zealand standards and in terms of the programmes that it offers is fairly typical of the sector.

Hawke's Bay Polytechnic is structured into five faculties:

	EFTS
Health Studies	244
Science and Technology	488
Maori Studies	100
Arts and Social Science	421
Business Studies	461
Total:	1714

Note: 1994 figures are used here.

CHAPTER FOUR
LITERATURE REVIEW

This chapter examines the wide ranging, and relatively recent research into organisational effectiveness. Starting with defining effectiveness and differentiating it from efficiency, seven models of organisational effectiveness are identified and considered. Quality, the impact of organisational life cycle theory and the measurement of effectiveness over time are each reviewed.

The review then makes a more detailed analysis of organisational effectiveness in tertiary education, and examines relevant research in the United States, Britain and Australia.

4.1 Effectiveness and Efficiency Defined.

Bedeian and Zammuto (1991, p. 61) echo the definition of Drucker (1974) when they state that:

> ...effectiveness may be thought of as "doing the right things," whereas efficiency involves "doing things right."

Efficiency is usually defined as the ratio of inputs to outputs (Bedeian and Zammuto 1991). It focuses primarily on internal structures, resources and processes (Viljoen 1991).

Effectiveness on the other hand is much harder to define. It relates to undertaking appropriate activities ('doing the right things'), and is more focused on the external environment. Robbins and Barnwell (1989, p. 46) are among the few to attempt a single definition:

> Organisational effectiveness can be defined as the degree to which an organisation attains its short - (ends) and long-term (means) goals, the selection of which reflects strategic constituencies, the self interest of the evaluator and the life stage of the organisation.

Strategic constituencies are those stakeholders - both internal and external - whose long term support is critical to the on-going survival of the organisation.

It should be recognised that no single model of effectiveness exists, nor is one likely to. The time dimension of effectiveness is expanded by Zammuto (1982, p. 161) who concludes:

> Organisational effectiveness is not a known or constant quality. The substantive nature of effective performance for any organisation changes as constituent preferences and the constraints which define an organisation's niche change..... Performance that is effective today is equally likely to be ineffective tomorrow as preferences and constraints change.
>
> The goal of the effective organisation is continually to become effective rather than be effective. The journey is, in this case, more important than the destination.

Organisational effectiveness has been the focus of many studies and much writing over the years. By the early eighties, researchers were somewhat perplexed. Bluedorn (1980, p. 478) voiced this clearly, suggesting that:

> The concept of organisational effectiveness has outlived whatever usefulness it may have had at one time... In almost any study of effectiveness, all references to the effectiveness concept could be removed without the loss of any information to the field at all.

Goodman, Atkin and Shoorman (1983) argued that all studies should stop while a new approach was developed which overcame what they saw as consistent problems in studies to date:

* Indicators of effectiveness were not identified adequately.
* Too much reliance was placed on single indicators of effectiveness at the expense of identifying relationships between indicators.
* Models were under specified and ignored the time frames of criterion variables.
* Over generalisation occurred as authors tried to develop models that applied over different organisations.

Other commentators supported these arguments, calling for a cohesive conceptual framework on which to base studies of organisational effectiveness (Connolly et al 1980; Nord 1983; Cameron and Whetton 1983).

Over the past decade scholars have moved from the point where defining organisational effectiveness was like "trying to nail jelly to the wall" (Robbins and Barnwell 1989, p. 27), to more of a consensus:

> Organisational effectiveness requires multiple criteria, that different organisational functions have to be evaluated using different characteristics and that organisational effectiveness must consider both means (process) and ends (outcome). (Robbins and Barnwell 1989, p. 27).

Various models have been used to measure organisational effectiveness. They can be summarised under seven broad headings as shown in Table Two.

Goal Attainment Models

This model is perhaps the most traditional approach to organisational effectiveness and certainly the most commonly used and easily understood (Bedeian and Zammuto 1991; Keeley 1984; Hall 1980).

The goal attainment model assumes that the organisation is able to set clear goals that cover the full range of its activities, and then works toward the achievement of those goals. Effectiveness then becomes the degree to which the organisation has achieved its specified goals. Supporters of this system point out that goals can be set outside the productivity sphere, and can include areas such as innovation, employee performance and satisfaction, and social responsibility. MBO (Management by Objectives) - the cure all, fix all management system of the early eighties - operationalises the goal attainment approach.

The approach is however fraught with inherent weaknesses. A critical question to ask is "whose goals?" Those of top management? General managers? Where does the line get drawn? The approach also gives no indications as to how one assesses the validity or value of the goal. Does the achievement of an ill developed goal really mean that the organisation is effective? Long term goals differ from short term goals - which has priority and who makes that decision? Multiple goals exist in any organisation, and achievement of one may be at the expense of

Table Two: Commonly Used Models of Organisational Effectiveness

Models	Definition	When Useful
	An organisation is effective to the extent that:	*The model is most preferred when:*
Goal Attainment Models	It accomplishes its stated goals.	Goals are clear, consensual, time-bound , measurable.
Systems Resource Models	It acquires needed resources.	A clear connection exists between inputs and performance.
Internal Processes Models	It has an absence of internal strain with smooth internal functioning.	A clear connection exists between organisational processes and performance.
Strategic Constituencies Models	All strategic constituencies are at least minimally satisfied.	Constituencies have powerful influence on the organisation and it has to respond to its demands.
Competing Values Models	The emphasis on criteria in the four different quadrants meets constituency preferences.	The organisation is unclear about its own criteria, or change in criteria over time are of interest.
Legitimacy Models	It survives as a result of engaging in legitimate activity.	The survival or decline and demise among organisations is of interest.
Fault Driven Models	It has an absence of faults or traits of ineffectiveness.	Comparisons among similar organisations are desired.

Adapted from Cameron (1984, p. 276).

another. Again, how are multiple goals prioritised? Internal conflicts can emerge as different departments pursue incompatible goals (Keeley 1984).

Cameron (1980, 1981) criticises the goal attainment model on the basis that often organisational goals are impossible to identify and that there are instances when organisations are judged ineffective despite reaching goals. Other research (Cameron and Whetton 1983) speaks of instances where organisations are judged effective despite failing to meet goals.

The development and achievement of goals is not challenged as a management practice. What is clear however is that as a means of measuring the effectiveness of the organisation on its own it is inadequate. The goal attainment model has a sensibleness about it which has an initial appeal and an ease of understanding. It is the inherent problems in identifying and setting appropriate goals that weaken its legitimacy as a model of organisational effectiveness.

System Resource Models

This model defines effectiveness as the extent to which an organisation is able to acquire scarce and valued resources (Bedeian and Zammuto 1991). Whereas the goals model focuses on ends, this one focuses on means, with inputs replacing outputs as the primary consideration (Yuchtman and Seashore 1967).

Bedeian and Zammuto (1991) find that most applications of this model occur where there is difficulty in establishing a causal link between inputs and outputs. They use the example of American college and university accreditation procedures which have focused on criteria such as staff : student ratios, budgets, library resources etc., with little real attention paid to examining outcomes. This system is also recognisable in the accreditation systems of polytechnics in New Zealand up until 1993. The New Zealand Qualifications Authority has undertaken the accreditation of most programmes seeking national recognition within the polytechnic sector and has used similar criteria to the American accreditation system. This accreditation system is now changing to meet the different criteria of the new qualifications framework. There is an implicit assumption that if the means are adequately provided for, the desired outcomes will be reached.

The use of the systems resource model has declined since the 1970s. Cameron (1980, 1981) finds that it has the same flaws as the goal attainment models - some organisations are determined as effective despite their failure to attract resources, and some organisations deemed to be ineffective were highly successful in obtaining resources. The emphasis on resource acquisition overlooks the resource usage, and gives no clues on how they are distributed internally within the organisation.

Internal Processes Models

This model focuses on measuring how well or otherwise the internal processes of the organisation are operating. It emerged from the human resource development and organisational development perspectives (Cameron 1984). Internal health, and the efficiency of internal procedures are the focus of this approach, developed in the 1960s and promoted by Argyris, Bennis and Likert (Cameron 1981).

It has been argued (Bluedorn 1980) that this model is not really an approach to effectiveness, but rather is a mechanism for identifying the determinants of effectiveness.

The New Zealand Qualifications Authority is at present developing a new qualifications framework which will replace all existing qualifications from the fifth form at secondary school up to degree level study and beyond. At this stage the university sector is not directly affected by this new system, though recent policy statements show that all awards including those issued by universities will be registered on the qualifications framework. All other secondary and tertiary providers, both state funded and privately operated, are or soon will be, affected. The new accreditation requirements for this framework apply the principles of the internal processes model, though concentrating primarily on the internal processes themselves and not measuring internal health. Institutions are required to identify the policies and procedures that lead to the delivery of the programme to the required standard. The premise used here is that if the policies and procedures are robust and thorough, the product will meet the standards required and do so in an appropriate manner. An audit mechanism follows the processes through to ensure that those identified are actually those that are followed.

As a determinant of effectiveness again we identify the same flaws as the goals attainment and systems resource models. Some remarkably effective organisations were at the time known for the internal strife and difficulty that they were undergoing. Cameron (1981) uses the example of the New York Yankees when despite highly publicised internal problems they won the world series in 1977 and 1978. The reverse may also occur - processes that are strong active and robust may fail to produce an effective product, though on balance it is probable that the

result of having strong internal processes is more likely to produce positive outcomes.

Strategic Constituencies Models.

Connolly et al (1980, p. 211) researched the approaches to organisational effectiveness available during the 1970s and determined that they were "...conceptually conflicting and empirically arid". They promoted the idea that effectiveness of an organisation may well vary depending on who you ask. Effectiveness, they say, is not a single statement but a set of several, perhaps many statements each reflecting the evaluative criteria applied by the various constituencies who are involved to a greater or lesser degree with the organisation. Known also as the stake-holder, or multiple constituency model, it allows both internal and external groups to have input, though external groups tend to be emphasised.

The organisation is effective when all its strategic constituents are at least minimally satisfied. Strategic constituents are those on whose support the organisation relies for its continued existence.

This model is similar to the one developed by Miles (1980), whose ecological model defined effectiveness as the degree to which the needs and expectations of the strategic constituents were met. This could be averaged into a single summary measure for the organisation, or could be seen as a series of different measures or scores based on the different constituents. Keeley (1978) used a similar rationale, but based his scores on reducing regret (minimising the gap between constituent expectation and actual performance) of the strategic constituents.

One of the interesting dimensions that arises in applying the strategic constituencies model is the concept of paradox. Cameron (1986) demonstrated that an effective organisation is one that can at least minimally meet the needs of all its constituents, or stakeholders, even when those needs are mutually exclusive of each other. Effectiveness is inherently a value judgement made by stakeholders each with their own perspective of what constitutes effectiveness. Bedeian and Zammuto (1991) use the example of customers queuing for half an hour at a bank in order to be served. This may constitute ineffectiveness to one customer who values time spent

highly, while to the next it will be a measure of effectiveness as the bank invests time meeting the individual needs of the customer and spends time with them. In the tertiary education system, a student may value highly an institution that provides opportunities for personal development and support through the provision of sporting and cultural facilities. A tax paying member of the community may see the institution as wasteful of scarce resources, re-directing them away from the primary purpose of educating the student in the academic and / or vocational spheres.

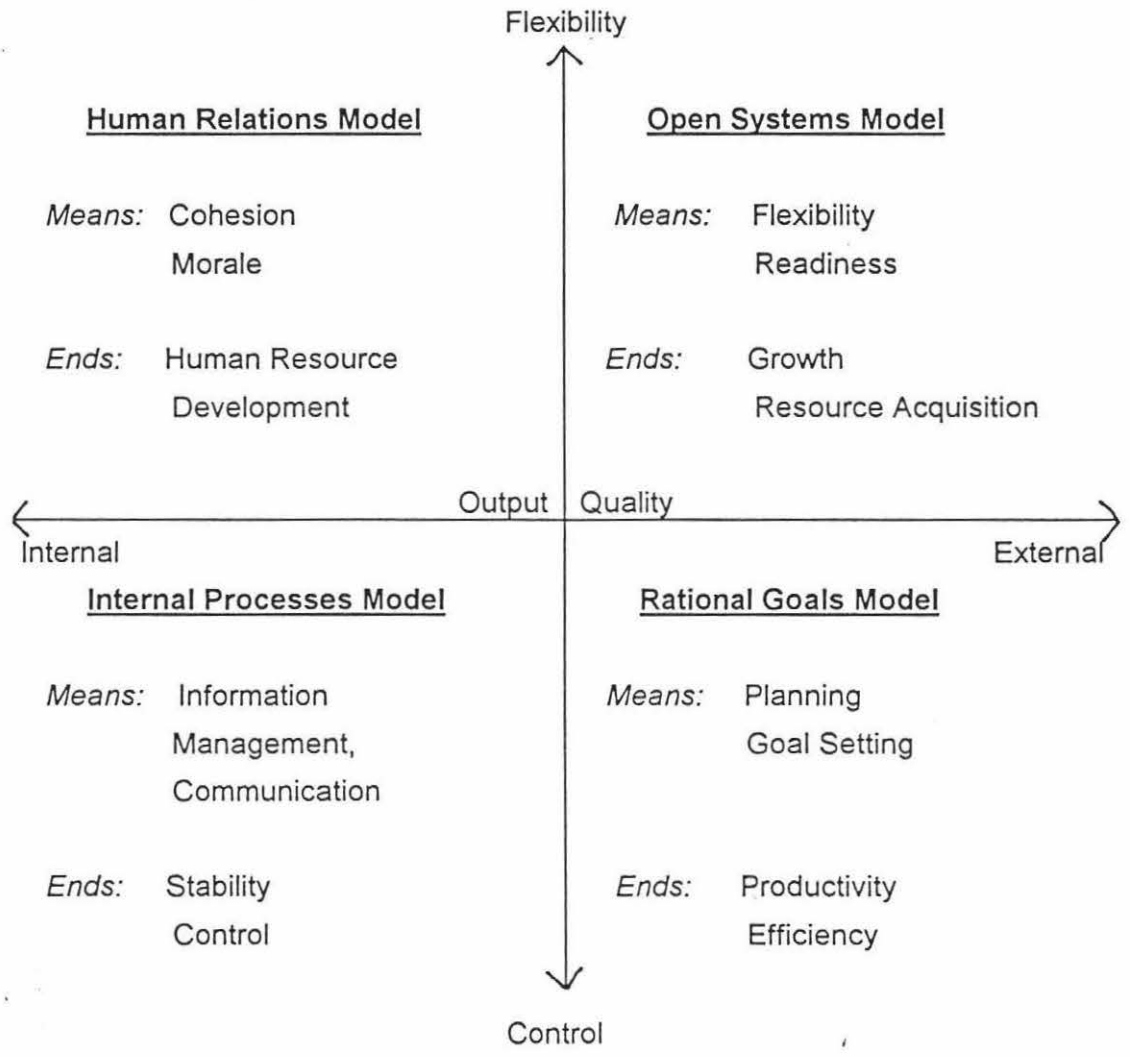
The model is not without weaknesses. Identifying strategic constituents in a rapidly changing environment is difficult - the critical stakeholder of today may not be critical tomorrow (Robbins & Barnwell 1989). Drawing the line between stakeholders and almost-stakeholders is not always easy. The researcher must also avoid the trap of identifying only the obvious or 'easy' stakeholders. Zammuto (1984) claims that the selection of constituencies is a critical factor often neglected. He states that while the model demands that all constituencies be included, in practice researchers must reduce this to a manageable number.

It is hard to argue against the many strengths of this model. Most critics identify difficulties in applying the model, rather than any inherent weaknesses. The model fits well with the emerging customer service orientation prevalent in many aspects of business and society today. It also has positive links with the quality movement - this will be discussed in a later chapter.

Competing Values Model

This more complex model emerged in the early 1980s, with a brief flurry of supporting research (Quinn and Rohrbaugh 1981 & 1983; Thompson et al 1981; Anderson 1981). The model picks up the attempts by previous researchers to identify and integrate the various effectiveness models. Like the strategic constituency model, it identifies the multiple and often conflicting variables and values of those making the effectiveness judgements. The model is shown in Figure IV.

Figure IV: The Relationship Between Value Sets and Models



(Quinn and Rohrbaugh 1983.)

The model determines that organisational effectiveness is judged by an individual by them trading off on each of three sets of competing values. Flexibility versus control create one pair of competing values. An internal, person oriented focus versus an external, organisational oriented focus create the second pair of competing values. The third set compares the organisational means and ends, with planning and goal setting (means) at one end and productivity (ends) at the other (Quinn & Rohrbaugh 1983).

The identification of four existing effectiveness measurement models is overlaid onto the three dimensions, and shows the relationships between the different

models. Both parallels and poles are identified. For instance, the same emphasis on flexibility is evident in both the open systems and human relationships models. The rational goal model and the internal processes model both have a control focus. A polar relationship exists between the human relationships model, with its emphasis on flexibility and an internal focus, and the rational goals model with its external focus and emphasis on control.

A primary application of this model is that it provides organisational researchers with a model that can be presented to the different interest groups so that they themselves can be aware of the trade-offs they are making when judging the organisation. It will be the participants themselves who identify and rank the indicators that are important to them, rather than the researcher. The difficulty in applying the model however still lies in the area of combining the measures produced. This is the subject of further research using a technique of social judgement analysis (Quinn and Rohrbaugh 1983). A complicated model, it has not found much application.

Legitimacy Model

This model states that organisations will act in ways that they believe permit their long term survival. It is linked to the earlier population ecology perspective, with organisational survival as the aim and legitimacy in the public eye being seen as the key. In this perspective, doing the right things is far more important than doing things right (Cameron 1984). The model is best applied in environments where there are decisions to be made about which organisations decline and die, and which will survive.

Fault Driven Model

Cameron has been one of the more innovative and prolific researchers in the field of organisational effectiveness in the 1980s, and his latest research in this area is unique. The model of ineffectiveness (Cameron 1984) is best applied when criteria for effectiveness are not obvious, or cannot be agreed upon at a time when there is a need to improve. By focussing on ineffective aspects of the organisation, the model provides clear indications of areas that should improve.

The justification for measuring ineffectiveness rather than effectiveness is based on the notion that it is easier, more accurate and more relevant for managers to focus on faults and weaknesses (criteria for ineffectiveness) than it is for them to focus on desirable outcomes and competencies (criteria for effectiveness) (Cameron 1984). There are reasons why this should be so. Faults are more obvious than strengths. When things go wrong, this is more obvious than when things are working, and consensus on what is wrong is more easily obtained than consensus on what is right. Faults in the organisation make people feel uncomfortable, and thus they are more willing to put time and energy into identifying what is wrong and thus ease the feeling of discomfort.

Fault tree analysis has been used to identify indicators of ineffectiveness. This is a process whereby the likelihood of success in a system is predicted by analysing the most likely causes of failure. It was used initially in the aerospace industry to prevent the accidental launching of missiles. Its use expanded in the 1960s to be an accepted technique in safety engineering, used primarily in technical areas. In 1968 fault tree analysis moved into the educational administration sector. There has been no direct research in the area of effectiveness / ineffectiveness, but the technique certainly could be applied. It should be noted that fault tree analysis is a tool for analysing organisational ineffectiveness, and is not a model in itself.

What is Effectiveness and How Can it be Measured?

Effectiveness must be viewed as an ever-changing construct, not as a fixed concept. It has multiple variables which change over time and the life cycle of the organisation. The different models outlined here are all useful in different circumstances. None can supply a complete measure of effectiveness. Any researcher must therefore first identify the environment in which the business is operating, then select the model that best applies to that environment. (See Table Two page 27).

The most widely used conceptual frameworks are the goal attainment and systems resource models. They are relatively simple to understand and to apply. They have a great deal in common, with both providing a 'snapshot' technique of making effectiveness decisions based on what is happening at a specific time. It is possible to see the two models as looking at the same thing but in a different time point - one

model at the 'input' phase and one at the 'output'. Both are internally focussed and do not involve the external environment in any decision making or judgement.

The internal processes model refines the systems resource model and has much in common with it. Instead of the question of "Do you have adequate books in your library? (a systems resources model type question), it would be re-phrased as "What are the policies and procedures that you have in place to ensure that there are adequate books in your library? (The internal processes model type question). The criticism that the model tends to concentrate on indicators of effectiveness, rather than measuring effectiveness, is valid. It does address the snap shot time frame problem of the previous two models, by requiring not only that the policies and procedures are in place but that they are operating - this can only be judged over time.

The strategic constituencies model is the first real attempt by researchers to grapple with the problem of effectiveness as being dependent on who you ask, that different interest groups will have different criteria and that these criteria change over time. Effectiveness is a value judgement, and any good model must recognise this.

The competing values model provides the participant groups with choices as to what criteria they will use to assess the organisation's effectiveness. The application of this is complex, and no successful manner of combining the resulting measures has been found.

The legitimacy model works at a macro level of analysis, and has limited general application. Little research has been identified to support the use of this model and it does not appear to have found any real application in the educational field.

The model of ineffectiveness has the major benefit of providing the manager with practical and applicable guide-lines for making improvements to the organisation. None of the other models do this, so pragmatically this method would appeal to the manager working on the philosophy of 'If it works, don't fix it!' It can be identified with the Total Quality Management movement that is popular in organisations today. The concept of continuous improvement requires the on-going process of identification and correction of things that can work better. The links with the 'quality' movement are discussed in the next section.

4.2 Effectiveness and Quality

This section looks briefly at the concept of quality, as distinct from effectiveness.

If defining 'effectiveness' is perceived as difficult, then defining 'quality' is even more difficult. We all know what it means - but there is a strong indefinable element present. We must accept that there is a close relationship between the two. High quality is concomitant with a high level of effectiveness.

In the early developments of the concepts of quality much emphasis was laid on the definition in production terms - a high standard of raw material, a low level of wastage, a high standard of production skill and technology.

W. E. Deming was one of the first writers on quality management, with his work in the United States in the early 1950s. Japanese industry was the first to pick up the concept and run with it, contributing in no small way to the reputation of that country in producing low cost quality products better than any western economy was managing at that time. Quality Management has seen the evolution of many application techniques - quality circles, total quality management - and various measures of quality standards - the ISO 9000 series being the most commonly known in New Zealand. New Zealand is becoming increasingly aware of these standards as the importers of our products demand that the source of their imports meets recognised quality standards. Many millions of dollars are invested each year in developing quality procedures to required standards. There have been recent moves by some tertiary institutions to become ISO accredited - Waikato University for example has recently earned accreditation for its MBA programme.

There are considerable problems in using the term 'quality' in terms of tertiary education. In an example used by Pauline Perry in her article on "Quality in Higher Education" (Schuller 1991), British tertiary institutions used external examination pass rates as a measure of quality. This level can be affected by the standard of entry criteria set by the institution. By setting a very high entry standard, institutions not only suffer from a reduced pool of potential students, and thus may not meet student number targets, they may be accused of creating unreasonable barriers, and failing to meet the needs of students (such as mature students with a previous

low level of academic attainment) who for many other reasons - social responsibility for example - they wish to have in their institutions. So, one needs to integrate entry level of students into the formula before making statements as to the 'quality' of the programme. This is but one example - one could also add measures of early failure and drop out rates, physical resources, academic staff, administrative and management procedures. What emerges is similar to that which emerges in the discussion of effectiveness - it is a multiple domain construct.

New Zealand secondary schools demonstrate many examples of the misuse of the concept of 'quality'. Every year, one can read in newspapers how certain secondary schools have achieved the 'best' pass rates in bursary, or school certificate, in their region. The publicity material of these schools make overt reference to the 'quality' of their school. The reality is that many of these schools have the benefit of a wealthy clientele which can fund resources for the school at a higher level than the norm - small class sizes for example - and they draw their students from selected groups in society for whom academic success is a long term family tradition. To boost the academic reputation further, bursaries are offered to selected students who already show the ability to succeed academically. If these schools achieved anything less than outstanding results, it would be a scandal. Success breeds success, and failure breeds failure. The quality of outputs is related to the quality of inputs. The local state funded secondary two kilometres away has its academic cream taken away on bursaries, the wealthy and academically able students pay fees to move away, and the school is left under-resourced both financially and in human resource terms. That they, like the more privileged school up the road, maximise the resources they have and produce the best possible results with what they have, is lost in the public eye of which is the 'best' school and which is the 'best quality'.

Quality, like effectiveness, is what the customer says it is. Christopher Ball (Schuller 1991, p. 101-102) writes of the need to identify qualities not quality:

> We are starting to talk about qualities rather than quality. Qualities need a variety of definitions; those definitions will relate to a variety of purposes in which higher education is involved. Multiple definitions of qualities relating to purposes will require a variety of evaluations, and a range of different judges to undertake those evaluations. The

> evaluations will provide a range of indicators with multiple uses. When the uses are understood, one returns to the definitions of qualities. It is a continuous circle.

If the reader feels that this definition has a lot in common with the definitions of effectiveness that emerge from the discussion on effectiveness models - so does the writer.

Quality is price related in the eyes of the customer. The more we pay for something, the better quality we expect. Fees in all tertiary institutions have been raised to the point where they are not only a serious financial burden to students and their families, they are a barrier to entry and a reason for non-entry. Students and parents paying several thousand dollars each year for tertiary education have a higher expectation of quality from the institution than ever before. In this respect the difference between quality and effectiveness is blurred further.

Schuller (1991) gives a clear message to tertiary institutions, when he states that the best indicator that an institution is a high quality institution is one that is seriously concerned about its own quality. An institution that refuses to discuss the question is highly suspect. The same could be said of effectiveness - an institution that is constantly monitoring its effectiveness is more likely to be an effective institution. To repeat Zammuto's (1982, p. 161) statement. "The goal of the effective organisation is continually to become more effective rather than be effective. The journey is, in this case, more important than the destination."

4.3 Effectiveness and Organisational Life Cycles

This section reports on the research on organisational life cycles as it impacts on the development and use of effectiveness models.

There are many models outlining organisational life cycles with most following a general path of conception and birth, youth, maturity and finally aging and decline.

Why has there been so much interest in life cycles? Different styles of organisational structure and management can be applied at different stages of an organisation's life cycle in order to maximise the effectiveness of the organisation at

that stage. Thus, it is in the organisation's best interests to be able to predict what stage the organisation is in and apply the most appropriate style to it (Ford 1988). This is where the link with effectiveness is most obvious. In order to be effective, the organisation must match its structure and management systems with the appropriate stage in its life cycle. This is then dependent on the ability of the organisation to identify accurately the stage it is in.

Researchers in this field have identified, and in various ways addressed, the following issues:

How many stages are there?

Different models have identified as few as two stages (Ford 1988), and as many as ten (Adizes 1979). There is no real consensus between researchers on this issue. It has been suggested that life cycle models can perhaps do no more than give us a feel of what an organisation may look like at a particular stage in its development (Ford 1988). Although the lack of agreement on this issue may be seen as a barrier to any useful work being done, this has not proven to be the case. Researchers do agree on the broad notions of the stages, with some breaking down the broader stages into more specific sub sets. A survey of the most accepted models of organisational life cycle has led to the identification of four broad stages:

* Entrepreneurial Stage: early innovation, niche formation, creativity
* Collectivity Stage: high cohesion and commitment
* Formalisation and Control Stage: stability and institutionalisation
* Structure Elaboration and Adaption Stage: domain expansion and adaptation

(Quinn and Cameron 1983)

Where are the boundaries between the stages?

If no agreement has been reached on the number of stages, there is obviously even more difficulty in identifying exactly when an organisation has left one stage and moved into the next. Although on a theoretical basis, the concept of organisational life cycle with periods of growth, maturity and decline is easily assimilated, there are considerable difficulties in actually identifying where a particular organisation sits at

any given time. The boundaries between stages are wide and blurred. Only two points are clear - the very start and the very end.

Different Stages Within the Organisation

In any large organisation we may have several different departments or divisions displaying the characteristics of quite different stages of their life cycle. Is it thus possible for these divisions to be considered globally and a valid conclusion made as to the stage in the life cycle that the organisation as a whole sits?

Lack of Practical Research

As has already been stated, although in theory the notion of organisational life cycle is relatively simple to grasp, and indeed much theoretical work has been done in this area, there is a lack of empirical data to support the theories developed. "Most life cycle models are armchair notions" (Ford 1988, p. 118).

The Relationship Between Product Life Cycle and Organisation Life Cycle

As products move through their life cycles, the divisions producing them will inevitably reflect this in some way. A product launch that is unsuccessful may have an immediate impact on how an organisation structures itself in response, regardless of the stage in the life cycle that the organisation is in.

Organisational Life Cycle Theory and Tertiary Institutions

A further issue that needs to be addressed is the relevance of life cycle theory to tertiary educational organisations. It could be argued that predominantly state funded tertiary educational institutions will not fit into any of the organisational life cycle models developed to date. Although each had a clear starting point, growth is primarily pre-determined by government policy. Up until 1992 the internal structure of polytechnics in New Zealand had been totally predetermined by government. No research has been identified in this area.

Life Cycle and Constituent Preferences

Research has shown that as an institution moves through its life cycle, the criteria used by its constituents to measure its effectiveness also change (Cameron and Whetton 1981; Quinn and Cameron 1983; Miles and Cameron 1982). What was preferred last year may not be what is preferred this year. Further, there are indications that different effectiveness models are more valid measures at the different stages of the organisations life cycle (Quinn and Cameron 1983).

4.4 Effectiveness and Time Periods

This section addresses one of the problems faced by all researchers of organisational effectiveness - that of determining the time period over which the effectiveness is being measured. Some models pre-determine a snap-shot approach, giving a measure at a particular time frame. This would be true of the goal attainment model, where one checks to see that the goals of an organisation were achieved.

Some models use historical data as a predictor of effectiveness in the future. An example is the systems resource model, which takes the past record of the organisation in terms of its success in acquiring resources and uses this to predict its effectiveness - in other words its ability to repeat that in the future.

Other models are constructed on the basis of gathering information about the organisation over a given time period - for instance the internal processes model requires researchers to assess the policies and procedures that are in place and judge their robustness, and also to check or audit to ensure that they are actually in place and operating.

More complex models take effectiveness as a multiple domain construct. Organisations operate in many domains simultaneously, but are rarely able to operate at maximum effectiveness in more than a few at any one time. (Cameron 1981). Indeed, operating effectively in one domain may preclude operating effectively in another. These domains have a variety of time frame requirements associated with them.

4.5 Effectiveness in Higher Education

Until the early 1980s, measurement of effectiveness in higher education has been resisted by provider organisations. Their managers argued that they were unlike any other organisation and therefore traditional measures of effectiveness were inappropriate and that the uniqueness and academic freedom of each institution would be threatened by such measures (Cameron 1986a; Baack 1987). This however did not however stop researchers working on the subject.

Webster (1981) has identified six common measures used in the United States in recent years:

* Reputational ratings
* Citation counts of staff
* Faculty awards and honours (e.g. Fulbright etc.)
* Student achievement after graduation
* Scores of students entering national exams
* Institutional resources.

Cameron (1986a) points out however that these criteria are limited in application to only the top fifty or so colleges in the country, and thus do not apply to about 95% of institutions. Cameron identified four key questions:

1 Can institutional effectiveness be assessed in such a way as to be associated with indicators of long term organisational viability (i.e. can external viability be demonstrated?)
2 What factors are most predictive of organisational effectiveness in colleges and universities?
3 What factors account for improvement in effectiveness over time?
4 In what ways do institutions that improve effectiveness over time differ from those that decline in effectiveness?

In a series of studies (Cameron 1978, 1981, 1982; Cameron and Whetton 1983), the criteria were tested and refined, with nine domains of effectiveness emerging consistently. These are summarised in Table Three. Cameron's first study in 1976 involved 41 colleges. The second study in 1980 went back to the same group, with 29 colleges participating. The same questionnaire was used in 1976 and 1980,

based around the nine domains. The survey population was based on the 'dominant coalition' in each college. In the 1980 study, of the 75 respondents in the twenty nine colleges, 49% were senior faculty members, with the other 51% drawn from academic, financial, student affairs and administrative staff.

Table Three: Nine Dimensions of Organisational Effectiveness in Institutions of Higher Education.

Dimension	Definition
1. Student Educational Satisfaction	The extent to which students are satisfied with their educational experiences.
2. Student Academic Development	The extent of the academic growth, attainment, and the progress of students at the institution
3. Student Career Development	The extent of occupational preparedness of the students, and the emphasis on career development provided by the institution
4. Student Personal Development	The extent of student development in non-academic non-career oriented areas, and the emphasis on personal development provided by the school
5. Staff Employment Satisfaction	The extent of satisfaction of faculty members and administrators with their employment at the institution
6. Professional Development and Quality of Staff	The extent of professional attainment and development of the faculty, and the emphasis on development provided by the institution
7. System Openness and Community Interaction	The extent of interaction with, adaption to, and services provided for the external environment by the institution
8. Ability to Acquire Resources	The ability of the institution to acquire needed resources such as high quality students and faculty, financial support
9. Organisational Health	The extent to which the internal process and practices of the institution are smooth functioning and benevolent

Adapted from: Cameron 1986a, p. 92.

These can be grouped into three broad headings (Lysons 1990):

Students:	* Academic
	* Career
	* Personal development
	* Satisfaction
Staff:	* Professional development and quality
	* Satisfaction
The Organisation:	* Health
	* Openness in the community
	* Ability to acquire resources

Cameron's nine dimensions of effectiveness have been the subject of further cross cultural studies in Great Britain and Australia. Some criticism of the early study was made concerning its interpretation (Goodman 1983), generality of results (Lysons and Ryder 1988) and its management perspective (Yorke 1987). Academics agree however that the studies do represent a major step forward in the analysis of organisational effectiveness in higher education (Lysons and Hatherley 1992).

Australian research (Lysons and Ryder 1988, Lysons 1990) used Cameron's questionnaire as a basis for further study. The study conducted in 1988, found Cameron's questionnaire to be meaningful in the Australian context. Thirty seven out of a total population of fifty institutions participated with responses from 495 senior academics and administrators. The response rate per institution varied between 13% and 47%. Organisational health emerged as the dominant predictor of effectiveness in tertiary institutions. A further finding showed that in the case of Australia only four of the nine initial variables were relevant: student personal development, staff satisfaction, organisational health and organisational openness.

The British research (Lysons and Hatherley 1992) also produced interesting results. The environment in Great Britain had been subject to considerable turmoil and change since 1985, when the Jarrett Report (Committee of Vice-Chancellors and Principals 1985) was published. Cameron's questionnaire was edited and reworded for the British context. Universities and polytechnics were surveyed and 715

questionnaires returned. Again, the survey population consisted of the 'dominant coalition' of senior academics and senior administrators. The results in Britain produced a higher level of reliability than in Australia. This has been interpreted (Lysons and Hatherley 1993) as based on the difference between a more recently developed colony such as Australia, and the more established tradition and reputation that is common to both Great Britain and the United States.

It seems likely that similar research if conducted in New Zealand would produce results similar to that of Australia. Both countries share a similar history, age, culture and economy.

It was further established that in areas where ambiguity exists in the identification of criteria, there must be clearly identifiable boundaries (Cameron and Whetton 1983). As it is not possible to include all criteria nor all points of view the researcher needs to be explicit about exactly what is and is not being measured (Cameron 1984). Cameron and Whetton (1983) identified a series of seven questions that would assist in this definition:

1 From whose perspective is effectiveness being judged?
2 On what domain of activity is the judgement focused?
3 What level of analysis is used?
4 What is the purpose of the assessment?
5 What time frame is employed?
6 What type of data are sought?
7 What is the referent against which effectiveness is judged?

Summary

The models presented are all accompanied by problems. It should be noted that in the academic community, a problem oriented approach is often adopted - where academics seek to find weaknesses with models rather than exploring the possibilities and potential of their use. The strategic constituency model typifies this, where the strongest criticism of it is not the way it is constructed but in its application.

It is clear that the basis for further work has been laid. Researchers, particularly Cameron, Lysons, Ryder and Hatherley, have broken new ground by confirming the nine domains of effectiveness in tertiary institutions through a series of studies in the United States, Britain and Australia, and indicating the dominance of some of the criteria in some environments. By including senior staff (the dominant coalition) in all studies, cross national comparisons can be made.

It is timely to expand and build on this base. There are other stakeholder groups in a position of power over the organisation, and on whose support the long term survival of the institution rests. While not claiming to have identified all stakeholders, this research expands the survey population to include four different stakeholder groups, and test Cameron's identified criteria against this wider group.

CHAPTER FIVE
RESEARCH FINDINGS

5.1 RESPONSE RATES

As previously discussed, questionnaires were distributed to four constituent groups in each of three polytechnic regions. A summary of responses to the questionnaire is presented in Table Four. These results are expanded in Appendix G-1.

Table Four: Summary of Response Rates

	Gisborne	Auckland	Hawke's Bay	Average
Polytechnic Students	73%	77%	80%	77%
Polytechnic Staff	44%	53%	67%	55%
School Students	90%	54%	76%	72%
Industry / Community	30%	25%	18%	24%

Face to face distribution and collection of questionnaires by teachers and tutors resulted in excellent response rates (73% - 90%). Where the group was issued with the questionnaires and asked to return them the response rate was 54%.

Polytechnic staff responses from Auckland were particularly pleasing given the return was via mail. The high response rate from Hawke's Bay polytechnic staff can probably be attributed to the extra communication and information about the research that would be given. A message over the polytechnic voice mail system was placed, giving extra information about the survey to staff. Support for the work had been articulated by staff to the researcher.

Industry and community members had the lowest response rates. This had been anticipated and so a much higher number was surveyed to ensure that a sufficient number of questionnaires would be returned.

Polytechnic Students Respondents

Appendix G-2 and G-3 provide a detailed breakdown of the responses. The sample was intended to cover a range of students in a variety of courses and this was achieved. Overall 82% of the students who responded were full time students and 18% were part time. Student programmes varied from part time (less than twelve weeks) to over one year in duration. Most students who responded were in programmes of one year. As this survey was taken early in the third term of the year (August, September and October), it can be assumed that most of the respondents had been in the polytechnic system for a reasonable length of time and were making informed responses.

Polytechnic Staff Respondents

The average number of years of employment of staff who responded was for Tairawhiti Polytechnic 6 years, Manukau Polytechnic 7.6 years and Hawke's Bay Polytechnic 4.3 years. This would indicate that the respondents were making informed judgements. It is interesting to note that the average length of employment of Manukau Polytechnic respondents is half as much again as that of Hawke's Bay. This may be an indication of the increased growth rates in recent years with associated increases in new staff members in Hawke's Bay compared with Manukau.

The survey sample was drawn from across all employee groups in the polytechnic, and this was reflected in the respondent results. The majority of responses were from the most numerous group - full time tenured tutors. Senior managers and section or programme managers produced a response rate higher than the actual proportion of their staffing levels in the polytechnics. Interest in the research topic itself may explain this.

Secondary School Students

Secondary school students were drawn from forms 5, 6 and 7. It will be of interest to the three polytechnics concerned, and perhaps a message to all polytechnics, that very few students indicated that they felt they knew a lot about the polytechnic sector. Most however indicated that they knew something (73%). A disturbingly high proportion (23%) indicated they knew only a little. Despite this there was a surprisingly high rate of

useable forms. Only four survey forms were discarded for incorrect completion. A full break-down of results can be seen in Appendix G-5.

Industry and Community Respondents

The survey sample of industry and community respondents used was the most physically remote group to access. A lower response rate was expected, and a higher sample number was selected to ensure adequate responses. A final overall response rate of 24% was achieved. Advisory group and council members produced the highest response rate - 31% . These people have a direct involvement in the polytechnics, and more of a vested interest in being part of an effective organisation.

The second group in this sample was the non-role holder. This group was accessed by asking those advisory group and council members to pass on a second form to a colleague who had no involvement. The low response rate from this second group (13%) can be attributed to two circumstances. First, the forms may not have been passed to a second party. The 69% of advisory group and council members who did not respond are also likely to have not passed on the form. Second, one would expect a low response rate from a sample who has no involvement in the sector, and who may feel that either they cannot make a valid response, or are just not interested.

The third group in the sample were the parents of secondary school students who had completed the form. This group produced a 27% response rate - which was higher than expected. Given the tendency of secondary school students to leave such papers in their bags along with last week's lunch, one should expect only a small proportion to have reached the group being sampled! Added to this was an anticipated low level of interest. The researcher had been warned by the principal of one of the secondary school to expect a low response rate and relayed information regarding a survey they had sent out which was of critical importance to the students in terms of which subjects they would like to see offered in the senior school. The response rate for that survey was actually lower than that achieved by this present research. One explanation may be that the complexity of the form actually worked in favour of completion. Oral feedback received from several sources in the secondary area, was that the form looked very important - not like the very user friendly and simple forms produced by the school - and because it looked more important, it was treated seriously. A full break down of results can be seen in Appendix G-6 and G-7.

As in the responses from the secondary school students, the majority of respondents indicated that while they felt they knew something about the polytechnic sector, very few felt they knew a lot.

5.2: Analysis of Results by Sector

Secondary School Students

Table Five: Secondary School Students Respondents Indicator Statement and Domain Grades and Rankings

	Indicator Statement Grades and Rankings					Domain Grades and Rankings				
	Gis	Auc	HB	Total	Rank	Gis	Auc	HB	Total	Rank
Student satisfaction	2.8	2.8	3.1	2.9	10th	4.2	4	4.1	4.1	=2nd
Student academic	3.4	3.5	3.6	3.5	=3rd	4	4.2	4.2	4.1	=2nd
Student career	3.8	3.9	3.9	3.8	1st	4.1	4.2	4.2	4.2	1st
Staff satisfaction	2.9	3.1	3.2	3.1	=7th	3.7	3.6	3.7	3.7	6th
Student personal develop.	3.9	3.4	3.7	3.7	2nd	3.6	3.7	3.6	3.6	=7th
Quality of staff	3	3.2	3.2	3.1	=7th	3.9	3.9	4	3.9	4th
Community involve	3.1	3	3.1	3.1	=7th	3.4	3.5	3.4	3.4	9th
Acquire resource	3.2	3.4	3.5	3.4	5th	3.6	3.9	3.8	3.8	5th
Social response.	3.5	3.1	3	3.2	6th					
Internal culture	3.3	3.7	3.6	3.5	=3rd	3.5	3.7	3.7	3.6	=7th

* *Student career development emerged as the most critical domain.*
* *Student academic development, ranked second equal in importance.*

* *There was a disparity in rankings between some groups of indicator statements and their domain.*
* *Small variations between the responses of the three institutions were noted.*
* *Some single indicator statements produced lower grades than others relating to the same domain.*

Student career development emerged as the most critical domain when determining effectiveness for secondary school students. In ranking both the indicator statements and the domain itself, this emerged as the most important with an average grade of 3.8 for the indicator statements, and 4.2 for the domain.

Also of importance for secondary school students was students' academic development. It was ranked second equal in importance as a domain, and third equal in importance using the indicator statements.

What must be noted was the disparity in rankings between the indicator statements and the domain. This inconsistency was in two forms. Firstly, when grading the domains, secondary school students generally graded higher. Secondly, the ranking given in some domains was inconsistent between the groups of indicator statements, and the domain statement. The most obvious of these occurred with the indicator statements of student satisfaction with programmes. These gave an average grade of 2.9 - ranking it as the least important domain. However the domain itself gave an overall grade of 4.1 - second equal in importance. This may have resulted for two reasons. Either the indicator statements did not represent in the minds of the respondents the overall domain, or the indicator statements, being the first in the survey may have been graded more conservatively than later on when the respondent was more familiar with and confident in using the grading scale. Changing the placement of the statements in subsequent studies may give further insight into this.

Other disparities noted were between the indicator statements of student personal development (ranked 2nd using the indicator statements and 7th as a domain) and internal culture (ranked =3rd using the indicator statements and =7th as a domain).

Small variations between the responses of the three institutions were apparent. Respondents from Gisborne with two exceptions graded the domains slightly lower than respondents from the Auckland and Hawke's Bay region. The exceptions were in

the indicator statements relating to social responsibilities and students' personal development. Gisborne respondents graded these consistently higher than the other regions. This could be a result of the socioeconomic and cultural status of the region. A higher degree of social awareness was certainly evident. Hawke's Bay on the other hand graded more consistently at higher levels than the other two regions, being on or above the average in almost all areas. The most noted exception was in the domain of social responsibilities where the opposite response to the Gisborne trend was indicated - Hawke's Bay secondary students graded this lower than the other two regions (though only marginally lower than Auckland).

Three indicator statements were graded lower than other indicator statements of the same domain. The most significant of these was the statement that most staff had published in one form or another in the past year. The low grades assigned to this reduced the ranking of the domain of quality of staff as a whole against the other domains. This may be a signal to the polytechnics that they are perceived as being more practical and applied in their orientation, as opposed to the more theoretical perspective of university education, where publishing is a traditional part of the role of staff. A second indicator statement that received lower than typical grades in its group was the statement in the section on polytechnic involvement with the community, the indicator being that a large number of polytechnic staff serve on committees, boards etc. in the community. The third indicator that resulted in grades that were out of line with others in the same domain was in the section concerning student satisfaction with their programmes. Here the grades assigned to the indicator 'students have a strong commitment to the polytechnic after they leave' (see Appendix A), were lower than the grades assigned to other indicator statements of the same domain.

Polytechnic Students

Table Six: Polytechnic Student Respondents Indicator Statement and Domain Grades and Rankings

	Indicator Statement Grades and Rankings					Domain Grades and Rankings				
	Gis	Auc	HB	Total	Rank	Gis	Auc	HB	Total	Rank
Student satisfaction	2.8	2.9	2.8	2.8	10th	4.4	4.4	4.5	4.4	=2nd
Student academic	3.4	3.6	3.4	3.5	5th	4.4	4.4	4.3	4.4	=2nd
Student career	3.9	4	4	4	1st	4.4	4.6	4.6	4.5	1st
Staff satisfaction	3.1	3.4	3.7	3.4	6th	4	4	4.3	4.1	=5th
Student personal	3.8	3.7	3.6	3.7	3rd	4	3.7	3.7	3.8	9th
Quality of staff	3.3	3.4	3.4	3.3	=7th	4.2	4.3	4.4	4.3	4th
Community involve	3.4	3.4	3.1	3.3	=7th	4.1	3.8	3.7	3.9	8th
Acquire resource	3.5	3.6	3.6	3.6	4th	4.2	4	4.2	4.1	=5th
Social response	3.1	3.4	3	3.2	9th					
Internal culture	3.8	3.8	3.9	3.8	2nd	4.2	4.1	3.9	4.1	=5th

* *The two consistently top ranking criteria were student career development and student academic development.*
* *There was a disparity between several of the indicator statements and the domains.*

* *The indicator statement regarding the number of staff who have published in the previous year again produced grades that were inconsistent with other grades in the domain.*
* *In the domain of social responsibilities, although the grades emerge in similar pattern, a higher standard deviation was noted.*
* *The results between the three regions did not vary greatly.*

As could be expected the two consistently top ranking criteria were student career development and student academic development. Secondary students shared the same view. There was an inconsistency between several of the indicator statements and the domains. As in the secondary students results this was most noticeable in the set of indicators related to student satisfaction with programmes (ranking 10th) and the domain statement (ranking =2nd). The same reasons are proposed as for the secondary students responses.

The indicator statement regarding the number of staff who have published in one form or other in the previous year also produced results inconsistent with overall results for the section - an average of grade 2.1, compared with an overall average for the section of 3.3. If one excluded the results of this statement the average for the group of indicator statements for the domain rises to 3.6. As suggested in the results of secondary student respondents, this may signal a perception of polytechnic staff as more practical and applied than university staff, where publications are a tradition.

A further point of interest relates to the section on social responsibilities. While the overall grades gave a range of results in line with others, it should be noted that the standard deviation was greater than the norm in the results. This was particularly evident in the responses to two of the three statements. The first statement in the group relates to making special provision for disadvantaged groups, and this produced a more typical response. The second two statements, one regarding gender equity and the other regarding racial balance, showed that there was a much wider range of views as to the importance of this as a domain. Several of the additional comments made on the forms made specific reference to these two statements.

The results between the three regions did not vary greatly, with grades above, below and on the average being spread relatively evenly across the three polytechnics with no clear differences emerging.

Industry and Community Results

Table Seven: Industry and Community Respondents: Indicator Statement and Domain Grades and Rankings

	Indicator Statement Grades and Rankings					Domain Grades and Rankings				
	Gis	Auc	HB	Total	Rank	Gis	Auc	HB	Total	Rank
Student satisfaction	3.2	3	3.3	3.1	9th	4.4	4.5	4.3	4.4	=1st
Student academic	3.2	3.4	3.5	3.4	=6th	4.2	4.4	4.3	4.3	=3rd
Student career	3.7	4	3.8	3.8	1st	4.3	4.5	4.4	4.4	=1st
Staff satisfaction	3.4	3.6	3.4	3.5	5th	3.7	4.2	3.8	3.9	=6th
Student personal	3.6	3.7	3.7	3.7	=2nd	3.5	3.6	3.7	3.6	9th
Quality of staff	3.3	3.4	3.5	3.4	=6th	4.1	4.5	4.3	4.3	=3rd
Community involve	3.4	3.6	3.4	3.4	=6th	3.8	4.1	3.8	3.9	=6th
Acquire resource	3.6	3.6	3.8	3.7	=2nd	3.9	4.5	4.2	4.2	5th
Social response	2.9	2.9	2.8	2.9	10th					
Internal culture	3.7	3.9	3.6	3.7	=2nd	3.8	4.2	3.9	3.9	=6th

* *Student career development was the most highly ranked domain.*
* *There were no clear differences in the rankings of the three geographic regions.*
* *Gisborne respondents tended to be more conservative in their use of the grading system.*
* *In most cases higher grades were used for the domains as opposed to the indicator statements.*

* *There was an inconsistency between the rankings of the indicator statements and the domain itself.*
* *Social responsibility indicators grade and rank was low, and produced a higher standard deviation than in other domains.*

Student career development was the highest ranked domain of effectiveness for industry and community groups. Several other trends were noticeable as follows.

There did not appear to be any clear differences in grading between the three geographic areas, except a tendency in the Gisborne region to grade lower overall. Thirty of the forty nine grades were below the average for the three regions. These formed no real pattern, and seemed to indicate nothing more than a conservative use of the grading system. This was contrasted by the responses from the Auckland region which had an equally strong tendency to grade consistently higher - thirty five of the forty nine grades were higher than the average for the three regions combined.

In most cases we saw higher grades being used for the domains as opposed to the indicator statements, and an inconsistency between the rankings of the indicator statements and the domain itself. Again this trend was most noticeable in the first section on the form - that concerning student satisfaction with programmes.

Social responsibility indicators, particularly the latter two statements regarding gender and racial equity issues, graded and ranked low, and again there was an indication of a higher than typical standard deviation - polarisation of views was once more in evidence. Interestingly there was no significant difference between the three regions in this respect.

Polytechnic Staff

Table Eight: Polytechnic Staff Respondents Indicator Statement and Domain Grades and Rankings.

	Indicator Statement Grades and Rankings					Domain Grades and Rankings				
	Gis	Auc	HB	Total	Rank	Gis	Auc	HB	Total	Rank
Student satisfaction	3.6	3.8	3.5	3.6	5th	4.7	4.6	4.7	4.7	1st
Student academic	3.4	3.3	3.5	3.4	=8th	4.4	4.4	4.2	4.3	=4th
Student career	3.7	3.4	3.5	3.5	=6th	4.3	4.1	4	4.1	=6th
Staff satisfaction	3.7	3.7	3.8	3.8	=2nd	4.4	4.3	4.5	4.4	3rd
Student personal	3.7	2.7	3.7	3.4	=8th	3.9	3.4	3.7	3.6	9th
Quality of staff	3.3	3.5	3.5	3.5	=6th	4.6	4.4	4.6	4.5	2nd
Community involve	4	3.4	3.9	3.8	=2nd	4.3	4	4	4.1	=6th
Acquire resource	3.7	3.8	3.8	3.8	=2nd	4.5	4.2	4.3	4.3	=4th
Social response	3.5	2.4	3.4	3.1	10th					
Internal culture	4.1	3.9	3.9	4	1st	4.2	4	4.2	4.1	=6th

* *A greater concern with internal culture than other groups was evident.*
* *Student satisfaction was given the highest grade of any domain in the survey.*
* *The gap between ranking the groups of indicators statements with the domains themselves was noted.*
* *Staff satisfaction ranked consistently highly.*

A greater concern with internal culture was reflected in the use of higher grades for this than in the other three groups surveyed. Staff satisfaction, somewhat understandably, was also graded and ranked highly.

In grading the domains, staff saw student satisfaction as the most critical giving it a grade of 4.7. and thus the top ranking. It was noted that students themselves ranked this as 2nd in importance, after career issues.

Once more the gap between ranking the groups of indicator statements with the domains themselves was noted. This was particularly evident in two areas. The first was in quality of staff where the indicator statement average ranking was 6th and the domain ranking was 2nd. The opposite trend occurred in the second area of internal culture, where the indicator statements average rank was 1st, while the domain as a whole was ranked 6th. Similar disparities were noted in the domains of community involvement (ranked =2nd and =6th), student satisfaction (ranked 5th and 1st) and student academic (ranked =8th and =4th)

Staff satisfaction ranked consistently highly across both indicator statements rankings and domain rankings.

5.3: Analysis of Results by Criteria

Table Nine: Summary of Grades and Rankings Across all Four Survey Groups

	Polytechnic staff		Polytechnic students		Industry and Community		School students	
	Indicat	*Dom*	*Indicat*	*Dom*	*Indicat*	*Dom*	*Indicat*	*Dom*
Student satisfaction	3.6 5th	4.7 1st	2.8 10th	4.4 =2nd	3.1 9th	4.4 =1st	2.9 10th	4.1 =2nd
Student academic	3.4 =8th	4.3 =4th	3.5 5th	4.4 =2nd	3.4 =6th	4.4 =3rd	3.5 =3rd	4.1 =2nd
Student career	3.5 =6th	4.1 =6th	4 1st	4.5 1st	3.8 1st	4.4 =1st	3.8 1st	4.2 1st
Staff satisfaction	3.8 =2nd	4.4 3rd	3.4 6th	4.1 =5th	3.5 5th	3.9 =6th	3.1 =7th	3.7 6th
Student personal	3.4 =8th	3.6 9th	3.7 3rd	3.8 9th	3.7 =2nd	3.6 9th	3.7 2nd	3.6 =7th
Quality of staff	3.5 =6th	4.5 2nd	3.3 =7th	4.3 4th	3.4 =6th	4.3 =3rd	3.1 =7th	3.9 4th
Community involvement	3.8 =2nd	4.1 =6th	3.3 =7th	3.9 8th	3.4 =6th	3.9 =6th	3.1 =7th	3.4 9th
Acquire resources	3.8 =2nd	4.3 =4th	3.6 4th	4.1 =5th	3.7 =2nd	4.2 5th	3.4 5th	3.8 5th
Social responsibility	3.1 10th		3.2 9th		2.9 10th		3.2 6th	
Internal culture	4 1st	4.1 =6th	3.8 2nd	4.1 =5th	3.7 =2nd	3.9 =6th	3.5 =3rd	3.6 =7th

Student Satisfaction

Student satisfaction with their educational experience was an important domain for all groups. Polytechnic staff overall graded this higher with an indicator statement grade of 3.6 (compared with 2.8, 3.1 and 2.9 in the other three groups) and a domain grade of 4.7 (compared with 4.4, 4.4 and 4.1 in the other groups). The indicators gave a much lower ranking than did the domain statement, indicating that respondents may not

match the indicator statements with the domain. Future research will need to identify more suitable indicator statements.

Student Academic Development

Staff ranked and graded this lower overall than the other three groups, who were all quite similar in their rankings. It is perhaps surprising that polytechnic students did not rank this higher. By combining the domain statement rankings and the indicator statement ranking we find that secondary students gave this the highest priority of the four constituent groups. Polytechnic students, however, used a slightly higher set of grades.

Student Career Development

This took the number one ranking for three groups - with polytechnic staff being the exception ranking it as 6th. It becomes overall the most important domain used in measuring effectiveness. This distinction is interesting, and perhaps tells us about the different perception that polytechnic staff have about their role, and the role of the polytechnic, and the perception of the role of the polytechnic held by other strategic constituencies.

Staff Satisfaction

This domain was considered more important by staff than by other groups, who ranked it consistently between 5th - 7th in importance. It is a section where there is a very close relationship between the indicator statement rankings and the domain rankings. This is one area where it can be assumed that the indicator statements are accurate representations of the domain.

Quality of Staff

An important domain for all groups. The inclusion of the statement regarding the publishing levels of staff pulled the overall ranking of this section down. That statement was graded lower by all groups and this had an impact on the ranking of the indicator statements.

Community Involvement

A lower ranking domain for all groups, with three of the groups - polytechnic students, industry and community, and school students producing relatively consistent rankings between the groups. Staff in polytechnics considered community involvement to be a more important domain than the other constituencies.

Ability of the Polytechnic to Acquire Resources

When the rankings of indicator statements and domains across all four groups were combined, this emerged as the second most important overall. It was not a domain where there was much disparity between the indicator statement rankings and the domain rankings (though it did vary particularly with the industry and community results).

Social Responsibilities

Ranked tenth by polytechnic staff and industry and community members, ninth by polytechnic students and sixth by school students, this domain was ranked overall tenth of the ten. It was measured only through the use of indicator statements and respondents did not have the opportunity to grade the domain presented as a single statement. This domain produced the greatest use of the full range of grades. It was also the domain about which the most comments were made. Industry and community groups produced a particularly low grade. It should be noted however that grades of 2.9 - 3.2 still gave this domain a status in the eyes of the respondents around the 'quite important' level.

Internal Culture

There were ten indicator statements for this domain - four more than for any other domain. It is an area where the use of indicator statement appears to be more meaningful to the individual than the domain statement itself. The indicator statement rankings from all four groups were consistently high: 1st by polytechnic staff, 2nd by polytechnic students, industry and community and 3rd by secondary school students. The ranking of the domain statement itself however produced a lower response of =5th by polytechnic students, =6th by industry and community, and polytechnic staff and

=7th by secondary school students. This could be explained by the lack of a clear understanding as to the meaning of the domain statement, as compared with the full set of indicator statements used.

5.4 Research Results

The survey results lend support to the nine domains of effectiveness identified in previous research (Cameron 1978, 1981, 1982; Cameron and Whetton 1983) and their relevance to New Zealand Polytechnics according to the constituencies surveyed. However the findings of Australian research (Lysons and Ryder 1988; Lysons 1990), that predicted organisational health (called internal culture in this research) as the main predictor of effectiveness, along with only three other domains - student personal development, staff satisfaction and organisational openness (called community involvement in this research) - have not been confirmed. It must be noted that the Australian studies, like Cameron's work, surveyed only internal senior academic and administrative staff members. If one refers only to the results from the polytechnic staff groups, the results of the Australian research are replicated in some areas. Internal culture / organisational health and community involvement / organisational openness both are top ranking indicators of New Zealand Polytechnic staff. Student personal development does not however rank highly.

The survey results from the other groups are not in line with the Australian research. The different rankings used by these three groups support the proposition that different constituent groups will use different priorities when ranking the importance of each domain. There is a marked similarity between the overall results from the other three groups surveyed, which contrasts strongly with the results of the polytechnic staff surveyed, which more closely follows the Australian results.

The difference between the results from the polytechnic staff respondents and the other three groupings of respondents can also be looked at in terms of the different perceptions held by different groups about the role of the polytechnic. It is easy to understand and accept that staff will naturally have more of an internal focus on their employing organisation than other more externally focused groups. A further explanation may lie in the shift of emphasis within polytechnics in recent years, of which staff will be much more aware than other groups. The move to degree level study has led to an increased emphasis in the polytechnics on quality of staff, qualifications etc.,

and this may have been reflected in the rankings given to these by staff. On the other hand, external groups are still quite strongly focussed on the more traditional vocational role of the polytechnic. Whether the staff of the sector like it or not, three of its major stakeholder groups give priority to the ability of graduates to obtain employment in evaluating polytechnic effectiveness.

The lack of consistency of results between the indicator statement rankings and the domain rankings is of concern. The fact that overall the indicator statements were graded lower than the domain statements is not the issue, rather it is the fact that in many cases the final rankings did not match to quite a large degree. This indicates that in some situations the indicator statements do not, in the eyes of the respondents, accurately represent the domain to which they are attached. The indicator relating to publications could be seen as irrelevant to the New Zealand polytechnic environment, which does not have a long history of academic publishing. Further research could result in this statement being dropped as an indicator.

In the area of social responsibility, the added 'tenth' domain results are interesting. The era of 'political correctness' seems to have created a backlash - perhaps the anonymity of this survey allowed people from all sectors to indicate their true feelings about some of these matters. Results in this section varied across all respondent groups. The standard deviation for this section was greater than those for all other sections, showing a polarity of views. It also produced more comment than any other single indicator, with respondents affirming their grading in words. Ranking 9th or 10th across three groups, with only secondary school students ranking it higher in 6th place, its use as a domain of effectiveness is not confirmed. Raw scores still indicate the importance of the domain, but standard deviations higher in this domain than in any other challenge its use.

One question which should be asked when refining this work to produce a model for use by polytechnics to monitor their own effectiveness is: what is the most important - the domain or the indicator statements?

It is vital that a series of indicators which accurately represent each domain are presented to the various constituent groups. While one would not argue with " Student Academic Development" as an important domain to use when making judgement as to the effectiveness of an institution, it is important to provide the respondent with more

quantifiable statements on which to make judgements - to ask the next question - how do you make judgements about this student academic development? What indicators do you use to make these judgements? This becomes more critical when looking at a domain such as "Productive and satisfying internal systems and practices" This is open to many interpretations and needs to be expanded into a series of indicators that relate to the internal workings of the organisation. The question remains, what are those indicators, and do they remain consistent across different constituent or stakeholder groups.

The poor relationship between the rankings of the indicators of effectiveness against the criteria, reinforces the need for more work to be done on the indicators. The domains are affirmed - but what now is needed is to refine the indicators so as to get a better match between the two.

Research Methodology

A number of limitations are noted. First, the difficulty of accessing and eliciting a satisfactory response from the more physically remote constituents. As the questionnaire was totally anonymous, it was not possible to monitor those who had returned them and those who had not. Thus follow up of non-respondents was not possible without contacting all. Further, it was not possible to monitor how many of the forms were passed on to another party (secondary school students passing on to parents and care givers, advisory group and polytechnic council members passing to another). Poor response rates from these groups may have been because of non receipt. This was counteracted to some extent by ensuring a large enough group was surveyed in the first place. It was quite clear however that the response rates of captive audiences (e.g. student groups) was significantly better than other groups.

The ranking scale used did not meet the needs of several respondents who commented on their difficulty with the scale and suggested alternatives. The primary weakness identified was the perceived skewing of the scale to the positive. The ranking of 1 was the only negative measure with too big a jump to 2. The other comment made was that to some respondents, 'quite important' meant something less than 'important'. A more satisfactory scale would have been:

1 Of no importance
2 Of marginal / some importance

3 Important
4 Very important
5 Of critical importance

A potential limitation was the risk that respondents would use the survey as a way of ranking the polytechnic with which they were familiar. Instructions both on the front page and in the body of the survey were intended to reduce this risk. It is clear that some respondents started to complete the form this way, realised their mistake and went back and changed the rankings.

The overall length and complexity of the survey form may have been a barrier to completion, though the numbers of secondary school students and polytechnic students who successfully completed the form with no obvious problems indicates that this was not the issue it may have been. One comment that was fed back to the researcher, was that because the form looked complicated it was perceived as being very important and thus filled in very carefully.

The final step of course is to produce a model which polytechnics can use to monitor and measure their own effectiveness. This research is a starting point for that model. Further work is now needed to refine the statements and devise a suitable method of identifying and accessing effectively the appropriate constituent groups.

CHAPTER SIX
CONCLUDING REMARKS

This study has produced data on effectiveness that has validated the use of Cameron's nine domains of effectiveness in New Zealand polytechnics.

Polytechnics in New Zealand constitute a broad range of institutions - far more broad than is found in polytechnics in other countries. From small rural based institutions running a narrow focus of programmes for as few as 146 students, the sector ranges up to large city polytechnics, offering a wide variety of degree programmes to over 7200 students.

No work on effectiveness had been done in New Zealand Polytechnics, and any criteria developed had usually been generated through the Ministry of Education to produce quantifiable data for use primarily for funding and resourcing purposes. With no model of effectiveness developed, polytechnics and other tertiary institutions are in a position of weakness as there is no counter argument to externally imposed measures.

One constraint of overseas research was that only senior academics had been used to elicit raw data. This work expands that grouping to include the more obviously identifiable major stakeholders - all staff, existing students, potential students (senior secondary students) and local industry and community members.

No real differences between the three polytechnics emerged, despite the wide variation in size and in geographic region. This means that we can make the assumption that despite the wide variety of institutions within the sector, the same domains of effectiveness will apply, and the same constituency groups in a different region will rank the domains in similar ways. The first point is critical, that the same domains are valid across the entire sector.

This research was conducted on the basis that indicators would be standard across different constituency groups. This assumption was not tested. The indicators used were drawn from previous research which surveyed senior academics in the institutions being studied, and may not be suitable for other groups, particularly external ones.

A line of future research is identified. This work creates the basis for the development of a model which can be used by polytechnics to monitor their own effectiveness.

Objective One
To identify:

* *the organisational components contributing to the overall effectiveness of New Zealand polytechnics*
* *those factors which are predictive of effectiveness in New Zealand polytechnics*
* *the relevance of overseas research in the New Zealand context*

Nine domains of organisational effectiveness have been identified, with further research needed into a tenth possible domain, that of social responsibility.

Overseas research into organisational effectiveness in tertiary education (Cameron 1978, 1981, 1982; Cameron and Whetton 1983; Lysons and Ryder 1988; Lysons 1990; Lysons and Hatherley 1993) has shown itself to be transferable to the New Zealand environment in some respects but not in others. The nine domains identified and confirmed in repeated research overseas were shown to be equally valid in the New Zealand polytechnic context. However, the emergence of organisational climate as a dominant predictor in overseas research was not confirmed in the New Zealand study.

Objective Two
To assess whether there was variation in the ranking of importance of the domains across a series of four constituent groups.

The results clearly demonstrated that the four constituent groups ranked the domains at different levels of importance. This result justifies the use of the strategic constituencies approach.

Objective Three
To determine if the indicator statements used are the indicators of effectiveness for that domain.

The use of indicator statements which predict effectiveness in a domain requires more work. In some cases there was a close alliance between the rankings of the domain and the rankings of the predictor statements, indicating that the factors had been

identified accurately. In other domains, there was a disparity between the two. This could be identified to a single indicator statement in some domains (statement regarding publishing outcomes in the domain of quality of staff) but not in others.

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APPENDIX A

Industry / Community Questionnaire

How do you measure how effective a polytechnic is? Everyone has their own ways of doing this. International research has identified performance measures that can be used. However, there is little New Zealand based research on these measures. Consequently we are interested in the measures which you, as a member of the community, would use and the priority you would give to them.

You don't need to know all about polytechnics to fill this in. This is not a way of checking up how effective you think your local polytechnic is. There are no right or wrong answers.

Please take some time now to complete this questionnaire, and return it in the attached pre-paid envelope - no stamp is required. Your input will be combined with input from others both in your region and from others, to give us a better picture of how we can best meet your needs.

Results will be confidential and it will not be possible to identify any individual's opinion. Filling in the questionnaire is voluntary although I would greatly value your participation. Completing the form should take no more than thirty to forty five minutes. It is assumed that by filling in this questionnaire that you consent to taking part in the research.

Information regarding the results of this research can be obtained by writing directly to:

Jay Easton
Dean of Business Studies
Hawkes Bay Polytechnic
Private Bag 1201
Taradale

Thank you for your support

Section One: Statistical Information.

1 Do you sit, or have you sat, on any polytechnic forum (advisory committee, council or similar)

Yes No (Please delete one)

If yes, please indicate the year of your most recent involvement: _____

2 How would you judge the extent of your knowledge about the polytechnic sector in New Zealand:

☐ I know a lot about polytechnics
☐ I know something about polytechnics
☐ I know very little about polytechnics

Please turn the page and complete Section Two...

Hawkes Bay Polytechnic Staff Questionnaire

Research is currently bring undertaken to identify performance factors which different groups use to make decisions about how effective a polytechnic is.

International research has identified a range of performance measures. This questionnaire is aimed at identifying the performance measures that are important to polytechnic staff in New Zealand, and the priorities they give them.

Please note that you are not asked to put your name on this questionnaire. Results cannot be linked back to any individual. Results of the research will be published to those polytechnics involved in the study.

Filling in this questionnaire is voluntary, although I would greatly appreciate your participation. Completing the form should take no more than thirty to forty five minutes. It is assumed that by filling in this questionnaire that you consent to taking part in the research.

Please return the completed form to Jay Easton, or put it in the box available in the staff room

Further information related to this research can be obtained from Jay Easton. A report summarising the results will be produced for the polytechnic.

Section One: Statistical Information

1 Please tick the box that best describes your position at the polytechnic:

- ☐ Senior Manager
- ☐ Section Manager
- ☐ Tenured tutor (full time)
- ☐ Tenured tutor (proportional)
- ☐ Part time tutor
- ☐ Administrative staff
- ☐ Technician
- ☐ Other: please name_____

2 How many years have you worked at the polytechnic:

- ☐ Less than one year
- ☐ 1 - 3 years
- ☐ 4 - 6 years
- ☐ 7 - 10 years
- ☐ 11 + years

Please turn the page and complete Section Two...

Polytechnic Staff Questionnaire

This research aims to identify performance measures which different groups use when judging the effectiveness of a polytechnic.

International research has identified a range of areas of performance measures which staff members associate with effectiveness. The purpose of this questionnaire then is to establish whether the same measures are relevant to polytechnic staff in New Zealand and the priority they give them.

Please note that the questionnaire is confidential and that results will not be traceable back to any individual. Polytechnics involved in the study will receive a copy of the overall research results and their interpretation.

Finally, filling in the questionnaire is voluntary although I would greatly appreciate your participation. Completing the form should take no more than thirty to forty five minutes. It is assumed that by filling in this questionnaire that you consent to taking part in the research.

Please return the completed form in the pre-paid envelope attached. Further information regarding this research can be obtained from:

Jay Easton
Dean of Business Studies
Hawkes Bay Polytechnic
Private Bag 1201
Taradale

Section One: Statistical Information

1 Please tick the box that best describes your position at the polytechnic:

- ☐ Senior Manager
- ☐ Section Manager/Course Controller
- ☐ Tenured tutor (full time)
- ☐ Tenured tutor (proportional)
- ☐ Part time tutor
- ☐ Administrative staff
- ☐ Technician
- ☐ Other: please name_____

2 How many years have you worked at the polytechnic:

- ☐ Less than one year
- ☐ 1 - 3 years
- ☐ 4 - 6 years
- ☐ 7 - 10 years
- ☐ 11 + years

Please turn the page and complete Section Two...

Polytechnic Student Questionnaire

We all use different ways of measuring how effective something is. This questionnaire attempts to identify how students measure the effectiveness of the polytechnic as a whole.

International research has identified a number of measures which can be used. We are interested in finding out whether these measures have the same importance for New Zealand students so we are asking you to judge them and decide how important they are to you.

The questionnaire is not aimed at your polytechnic specifically - students in other polytechnics will be asked the same questions. Other questionnaires will be given to staff and community groups to see what factors are important to them.

Please note that you are not asked to include your name. Results will be confidential and it will not be possible to identify any individual's opinion. Filling in the questionnaire is voluntary although I would greatly value your participation. Completing the form should take no more than thirty to forty five minutes. It is assumed that by filling in this questionnaire that you consent to taking part in the research.

Further information can be obtained from:

Jay Easton
Dean of Business Studies
Hawkes Bay Polytechnic
Private Bag 1201
Taradale

Thank you for your time in completing this.

Section One: Statistical Information

1 Are you a:

- ☐ Full time student
- ☐ Part time student

2 Length of your programme

- ☐ Part time programme
- ☐ Twelve weeks or less
- ☐ Approx half year
- ☐ One year
- ☐ More than one year

Please turn the page and complete Section Two...

Secondary School Students and Care givers Questionnaire.

Polytechnics are becoming more popular with secondary school students as a place to get further education and training. We need to find out what it is that makes polytechnics effective from the point of view of their future students.

You don't need to know all about polytechnics to fill this in. This is not a way of checking how effective you think your local polytechnic is.

International research has given us a list of measures. We need to see if they are the measures that you would use, and how important each of those measures is for you. There are no right or wrong answers.

This research is being carried out in several regions in New Zealand.

Please take the time now to complete this questionnaire. Parents and care givers can return the form in the pre-paid pre paid envelope attached - no stamp is required. Secondary school students will hand this in at school.

Please note that you are not asked to include your name. Results will be confidential and it will not be possible to identify any individual's opinion. Filling in the questionnaire is voluntary although I would greatly value your participation. Completing the form should take no more than thirty to forty five minutes. It is assumed that by filling in this questionnaire that you consent to taking part in the research.

Information regarding the results of this research can be obtained by writing directly to:

Jay Easton
Dean of Business Studies
Hawkes Bay Polytechnic
Private Bag 1201
Taradale

Thank you for your time.

Section One: Statistical Information:

1 Please tick the box that describes you:

- ☐ I am enrolled at secondary school
- ☐ I am the parent / care giver of a secondary school student

2 Please tick the box which best describes how much you know about polytechnics in New Zealand:

- ☐ I know a lot about polytechnics
- ☐ I know something about polytechnics
- ☐ I know very little about polytechnics

Please turn the page and complete Section Two...

Section Two:

We all measure things differently and we are trying to determine what factors are important to you when you are judging the effectiveness of a polytechnic. Listed below is a series of statements for you to consider and then rank in terms of how important you think they are in achieving overall polytechnic effectiveness.

Please use the following ranking scale:

Of no importance	Important	Quite important	Very important	Of critical importance
1	2	3	4	5

For instance, for question three, if you feel that student drop out rates has no bearing on how effectively the polytechnic is performing, you would rank it 1. If on the other hand you believe that this is a vital indicator of how well the polytechnic is performing, you would rank it 5.

Student Satisfaction with Programmes

3	Very few students drop out of their programmes	☐
4	Students have a strong commitment to the polytechnic after they leave	☐
5	Only a few student complain about their educational experience at the polytechnic	☐

Student Academic Development

6	The polytechnic has the reputation of being a stimulating intellectual environment with a high concern for student academic welfare	☐
7	The academic achievement of students is among the top in the country	☐
8	The polytechnic offers activities outside the classroom that enhance student academic development	☐
9	The majority of students in the polytechnic go on to higher level programmes of study	☐
10	The majority of students engage in academic work (reading, writing, studying etc) over and above what is specifically required by their programme	☐

Student Career Development

11	The polytechnic provides career development opportunities (work experience, interview skills training etc) for students.	☐
12	Most graduating students get a job	☐
13	Most students attend the polytechnic with definite career goals, as opposed to attending for social, financial or other reasons	☐

Staff Satisfaction with Employment

14	The majority of teaching staff are satisfied with their jobs and would choose to stay even if they were offered a similar job somewhere else	☐
15	The majority of administrative and technical staff are satisfied with their jobs and would choose to stay even if offered a similar job somewhere else	☐
16	The majority of senior management staff are satisfied with their jobs and would choose to stay even if the were offered a similar job somewhere else.	☐

Please use the following ranking scale:

Of no importance	Important	Quite important	Very important	Of critical importance
1	2	3	4	5

Student Personal Development

17	The polytechnic provides many opportunities and activities which develop the student as a person (as distinct from academic development)	☐

Quality of Staff

18	Teaching staff are actively involved now in professional development activity eg doing research, improving qualifications and/or skills, attending conferences, seminars or workshops	☐
19	The majority of teaching staff have published an article in a professional journal, published a book or displayed a work of their art in the past year	☐
20	Teaching staff are at the cutting edge of their field ie they read and use the latest journal articles and texts, revise courses regularly and discuss current issues with their students	☐
21	The majority of teaching staff have at some time received an academic award or honour such as a teaching, research or professional award	☐
22	The polytechnic provides opportunities for professional development for all staff	☐
23	When employing new staff the polytechnic can attract the leading people in the country in their fields to take a job here	☐

Polytechnic Involvement with Community

24	The polytechnic listens and responds to the changing needs of the community	☐
25	The polytechnic puts a lot of emphasis on polytechnic / community relations	☐
26	A large number of polytechnic staff serve in the community on boards, committees as consultants or in other capacities	☐

Polytechnic Ability to Attract Resources

27	The polytechnic can attract the finance it needs to provide high quality educational programmes	☐
28	The polytechnic gets a high quality of applicants for its programmes	☐
29	Top students choose to come to this polytechnic because of its reputation, rather than attend another polytechnic	☐

Polytechnic Social Responsibilities

30	The polytechnic makes special provisions to include disadvantaged groups	☐
31	Most programmes run operate with similar numbers of male and female students	☐
32	The staff and students reflect a similar balance of the racial groups that live in the community	☐

Below are some other factors that you may use in deciding how effective a polytechnic is. Please rank them as before. If for you they are a critical factor rank with a 5. If on the other hand the factor would be totally unimportant to you in deciding how effective the polytechnic is, rank it 1.

Of no importance 1	Important 2	Quite important 3	Very important 4	Of critical importance 5

33	Student staff relations	☐
34	Relations between different teaching departments	☐
35	The way staff and students in the polytechnic are treated and rewarded	☐
36	Amount of feedback and information received by staff and students	☐
37	Typical communication styles used in the polytechnic	☐
38	The general social environment	☐
39	The flexibility of the administration	☐
40	The general levels of trust	☐
41	The amount of conflict and friction	☐
42	The level of long term planning and goal setting	☐

Finally please rate the relative importance that you believe the polytechnic should place on each of the following factors. Please use the familiar scale of 1 - 5.

43	Having students satisfied with their educational experiences	☐
44	Having students develop and progress academically	☐
45	Having students become trained and progress towards an occupation or career	☐
46	Having students develop in personal, non academic areas (eg socially, emotionally)	☐
47	Having staff members satisfied with their employment	☐
48	Having high quality and professionally developed teaching staff members	☐
49	Having productive polytechnic / community / industry relations	☐
50	Having the ability to acquire resources for the polytechnic (good students, finance, staff etc)	☐
51	Having productive and satisfying internal systems and practices in the polytechnic	☐

If there are any other factors which you would use to make judgements on the effectiveness of a polytechnic, please list them here, and say how important they would be. Use the 1 - 5 scale if you wish:

_____

_____

_____

_____

_____

Thank you for taking the time to complete this form. Please return it as indicated on the first page.

APPENDIX B

12 September 1994

The Principal
Gisborne Girls High School
Gladstone Road
Gisborne

Dear Madam

I am currently engaged in research aimed at identifying those criteria which lead to effectiveness in polytechnics.

As part of this research I am asking potential future polytechnic students and their parents to complete a questionnaire. I am undertaking this work in three regions of New Zealand, of which Gisborne is one. The work is not aimed at measuring how effective your local polytechnic is, but rather to see what measures different community groups, including potential students, use when judging polytechnics.

I would like to ask your permission to spend between thirty and forty five minutes with senior (sixth or seventh form) students in your school, while they complete the questionnaire. Alternatively a teacher of the class can issue and collect the questionnaire for me. The students will be given a second questionnaire to take home to their parents, which will not be returned to the school but posted directly back to me. The questionnaire has passed the requirements of the Massey University Research and Ethics Committee. It is anonymous and confidential. Completing the form is, of course, entirely voluntary.

I will be in Gisborne on Monday 26 and Wednesday 28 September, and can make myself available at any time to fit in with your school timetable. I would like to survey a minimum of 50 students - at least two classes - but I am of course quite willing to fit in with whatever is available.

In return for the time given to me, I am more than happy to talk to you and your staff about the new qualifications framework and its implications for secondary schools particularly in the areas of commerce, computing and typing subjects. I sit on two NZQA advisory groups overseeing the writing of units and developing qualifications in these areas, and can provide up to the minute details and explanations of what is happening. This can be scheduled at any time on the two dates mentioned, and I am happy to talk with individuals, groups or the whole staff if you wish.

I look forward to hearing from you.

Yours sincerely

Jay E Easton Dip Bus Admin, BBS, Dip BS (Acc), Dip Tchg.
Dean Business Studies
Hawkes Bay Polytechnic

APPENDIX C

Instructions for Administering the Questionnaire

Thank you for giving your time in class for this. I would anticipate that completing the form and handing it in should take no more than 30 minutes.

Each student has two questionnaires. The questionnaires are already clipped into pairs - one with a postage paid envelope attached, and one without.

The students complete the questionnaire without the envelope. Could you ask the students to take the one with the envelope attached home and give to their parents or care givers to complete. The questionnaire that goes home is returned to me directly through the mail, with no involvement of the school.

Both questionnaires are identical.

Could you please read the instructions on the first page to the students, then leave it up to them to fill in. If students are having trouble with reading the questions I would appreciate any help you can give them. I am aware that some of the language used in the questions may be difficult for some students.

If a student doesn't understand a question, or doesn't have a response, please ask them to leave it blank.

Once the students have completed their questionnaire, could you collect them and given them to whoever gave them to you. I will come and collect them from the school.

Once again thank you, and I'd appreciate you thanking the students on my behalf. I will be sending the school a summary of the results once the collation and analysis is completed.

Jay Easton
Dean Business Studies
Hawkes Bay Polytechnic
Private Bag 1201
TARADALE

APPENDIX D

12 September 1994

Chief Executive Officer
Tairawhiti Polytechnic
PO Box 640
Gisborne

Dear Rosemary

As I have discussed with you during my last visits to your polytechnic, I am undertaking research into polytechnic effectiveness. This involves surveying various groups in the community and in the polytechnic.

The questionnaire and survey method has been approved by the Massey University Research and Ethics Committee. Completing the questionnaire is voluntary (this is stated on the form) and all information is confidential. The form does not require any personal details that would identify any individual.

I would like your permission to have access to the following groups:

Advisory Committees and Council members: Each will be sent two questionnaires, one for themselves, one to pass on to another person. I would need the names and addresses of these people for the purposes of a single mail out to them. I will be including a stamped addressed envelope for the return. Names and address lists would be destroyed once the mail out was made.

Staff at the Polytechnic. I would like to put one questionnaire in each staff pigeonhole. Staff will be given a stamped addressed envelope to return the questionnaire to me directly.

Students. Ideally I would like to have the questionnaire distributed to one class in each 'school', to gain a response from a cross section of students. I would ask the tutor taking the class to distribute the form during a class time, and collect it at the end of the session, to return to me in bulk. If it is possible or more desirable for me to administer the questionnaire I am happy to do so.

I will be in Gisborne for the accreditation visit on 27 September. I am arranging to come up for the Monday and stay on the Wednesday in order to activate this research. During this time I will also be surveying two local secondary schools. I am writing to the principals directly regarding this.

I look forward to your response and cooperation. If all goes well with the research, I will be able to provide you with some clear guidelines of what our various 'customers' really expect of polytechnics.

Yours faithfully

Jay E Easton Dip Bus Admin. BBS, Dip BS(Acc), Dip Tchg
Dean of Business Studies

APPENDIX E

Instructions for Administering the Questionnaire

Thank you for giving your time in class for this. I would anticipate that completing the form and handing it in should take between 30 - 45 minutes.

Please issue each student with a questionnaire.

Could you please read the instructions on the first page to the students, then leave it up to them to fill in. These instructions include an explanation of what the questionnaire is about.

If students are having trouble with reading the questions I would appreciate any help you can give them. I am aware that some of the language used in the questions may be difficult for some students.

If a student doesn't understand a question, or doesn't have a response, please ask them to leave it blank.

Once the students have completed their questionnaire, could you collect them up, and return them to me, either in my pigeonhole or through the Business Studies faculty.

Once again thank you, and I'd appreciate you thanking the students on my behalf. I will publishing a summary of the results once the collation and analysis is completed.

Jay Easton
Dean Business Studies

APPENDIX F

Dear Council / Advisory Committee Member

I am conducting some research on polytechnic effectiveness. Your local polytechnic is one of the polytechnics that has agreed to be part of this work. Other groups to be surveyed include staff, students and local secondary school students. Industry and community input is a vital part of the survey.

Two survey forms are attached. Could you please complete one yourself, and return it in the enclosed return paid envelope. Could you pass the second form and envelope on to a colleague who is preferably not directly involved with the polytechnic and ask them to complete and return it.

The cover of the survey gives a more thorough explanation of the purpose of the survey. It is confidential and anonymous, and completing it is of course entirely voluntary though I do hope for your co-operation.

The final results of this research will be available at the polytechnic once it is completed.

Yours sincerely

Jay E Easton
Dean of Business Studies
Hawkes Bay Polytechnic
Private Bag 1201
Taradale

APPENDIX G

G-1: Summary of Responses

	Polytechnic Students	Polytechnic Staff	School Students	Industry/ Community
Gisborne				
Issued	100	100	60	122
Returned	73	44	54	37
Response	73%	44%	90%	30%
Auckland				
Issued	100	120	80	147
Returned	77	64	43	37
Response	77%	53%	54%	25%
Hawke's Bay				
Issued	120	120	120	185
Returned	96	80	91	34
Response	80%	67%	76%	18%

G-2: Nature of Enrolment of Polytechnic Student Respondents.

	Gisborne	Auckland	Hawke's Bay	Total
Full Time Students	93% (68)	95% (73)	64% (62)	82% (203)
Part Time Students	7% (5)	5% (4)	36% (34)	18% (43)
Total	73	77	96	246

G-3: Length of Programme of Polytechnic Student Respondents.:

	Gisborne	Auckland	Hawke's Bay	Total
Programme Length:				
Part time	1% (1)	3% (2)	13% (12)	6% (15)
< 12 weeks	19% (14)	3% (2)	17% (16)	13% (32)
Half year	7% (5)	43% (34)	2% (2)	17% (41)
One year	57% (41)	48% (37)	29% (28)	43% (106)
> One year	16% (12)	3% (2)	39% (39)	21% (52)
	73	77	96	246

G-4: Status of Employment of Polytechnic Staff Respondents.

	Tairawhiti Polytechnic	Manukau Polytechnic	Hawke's Bay Polytechnic	Total
Senior Manager	9% (4)	16% (10)	11% (9)	12% (23)
Section or Prog Manager	20% (9)	23% (15)	15% (12)	19% (36)
Full time tenured tutor	18% (8)	47% (30)	45% (36)	40% (74)
Proportional tenured tutor	9% (4)	8% (5)	5% (4)	7% (13)
Part time tutor	5% (2)	0	2% (2)	2% (4)
Admin staff	18% (8)	0	8% (6)	8% (14)
Technician	16% (7)	3% (2)	4% (3)	6% (12)
Other	5% (2)	3% (2)	10% (8)	6% (12)
Totals	44	64	80	188

G-5: Secondary Student Respondents Self Evaluation of Knowledge of the Polytechnic Sector

	Gisborne	Auckland	Hawke's Bay	Total
I know:				
A little	35% (19)	16% (7)	20% (18)	23% (44)
Some	65% (35)	77% (33)	76% (69)	73% (137)
A lot	0	7% (3)	4% (4)	4% (7)
Totals:	54	43	91	188*

* NB Totals exclude four forms incorrectly completed

G-6: Source of Respondents: Industry and Community.

	Advisory group or council member	Non role holder in poly -technic	Parent or care giver of secondary student	Total
Gisborne				
Issued	34	34	54	122
Returned	15	6	16	37
Response	44%	18%	30%	30%
Auckland				
Issued	52	52	43	147
Returned	11	4	22	37
Response	21%	8%	51%	25%
Hawke's Bay				
Issued	47	47	91	185
Returned	15	7	12	34
Response	32%	15%	13%	18%

G-7: Industry / Community Self Evaluation of Knowledge of Polytechnic Sector.

	Gisborne	Auckland	Hawke's Bay	Total
A little	16% (6)	19% (7)	15% (5)	17% (18)
Some	76% (28)	68% (25)	70% (24)	71% (77)
A lot	8% (3)	13% (5)	15% (5)	12% (13)
Total	37	37	34	108

G-8: Summary of Results from Secondary School Student Respondents

	Gisborne		Auckland		Hawke's Bay		Summary	
Section 2:	avg	std.dev	avg	std.dev	avg	std.dev	avg	std.dev
3	3.1	1.3	3.2	1.1	3.6	0.9	3.4	1.1
4	2.3	1.3	2.2	1.1	2.5	1.1	2.4	1.2
5	2.9	1.3	3.1	1.1	3.2	1.1	3.1	1.2
block 3-5	2.8	1.3	2.8	1.2	3.1	1.1	2.9	1.2
6	3.5	1.2	3.9	1.1	3.9	0.9	3.8	1.1
7	3.5	1.2	3.8	1	3.8	1.1	3.6	1.1
8	3.6	1.1	3.7	1.1	3.8	0.9	3.7	1
9	3.3	1.4	3.2	1.1	3.4	1	3.3	1.2
10	3	1.3	3.1	1.1	3.1	0.9	3.1	1.1
block 6-10	3.4	1.3	3.5	1.1	3.6	1	3.5	1.1
11	4.2	0.8	4.1	1	3.9	1	4	1
12	3.9	1.1	4.3	1.1	4.1	1.1	4.1	1.1
13	3.4	1.2	3.3	1	3.5	0.9	3.4	1
block 11-13	3.8	1.1	3.9	1.1	3.9	1	3.8	1.1
14	2.9	1.1	3.2	1.1	3.2	1.1	3.1	1.1
15	2.8	1	3.1	1.2	3.1	1	3.1	1
16	2.9	1.1	3.1	1.2	3.3	1.1	3.1	1.1
block 14-16	2.9	1.1	3.1	1.1	3.2	1.1	3.1	1.1
17	3.9	0.8	3.4	1	3.7	1	3.7	1
18	3.5	1.1	3.7	0.9	3.6	1	3.6	1
19	2.2	1.1	2.2	1.2	2.4	1.1	2.3	1.1
20	3.5	1.3	3.7	1.1	3.5	1.1	3.5	1.1
21	2.8	1.2	2.8	1.2	3.1	1.1	2.9	1.1
22	3.3	1.1	3.2	1	3.3	1	3.3	1
23	2.9	1	3.4	1.1	3.3	1	3.2	1.1

block 18-23	3	1.2	3.2	1.2	3.2	1.1	3.1	1.2
24	3.4	1.2	3.6	1	3.6	1	3.5	1.1
25	3.2	1.1	2.9	1	3.2	1	3.1	1
26	2.6	1	2.6	1.2	2.5	0.9	2.5	1
block 24-26	3.1	1.1	3	1.1	3.1	1.1	3.1	1.1
27	3.3	1.3	3.9	0.9	3.9	0.9	3.7	1.1
28	3.2	1.2	3.3	0.9	3.2	1	3.2	1
29	3.1	1.4	3.1	1.2	3.3	1.1	3.2	1.2
block 27-29	3.2	1.3	3.4	1.1	3.5	1	3.4	1.1
30	3.9	1.2	3.5	1.3	3.4	1.2	3.5	1.3
31	3.2	1.4	2.9	1.3	2.8	1.2	3	1.3
32	3.4	1.3	2.9	1.2	2.8	1.2	3	1.3
block 30-32	3.5	1.3	3.1	1.3	3	1.2	3.2	1.3
33	3.7	1.2	4	0.8	3.8	0.9	3.8	1
34	3	1.1	3.4	1	3.3	1	3.2	1
35	3.5	1.2	3.9	1.2	3.9	0.8	3.8	1.1
36	3.4	1.2	3.7	0.9	3.6	1	3.6	1.1
37	3	1.2	3.3	0.9	3.2	1.1	3.2	1.1
38	3.2	1.2	3.7	1	3.5	1.1	3.4	1.1
39	3	1	3.5	1	3.4	1	3.3	1
40	3.5	1.4	3.5	1.1	3.8	1.1	3.7	1.2
41	2.8	1.3	3.8	1.1	3.4	1.2	3.3	1.3
42	3.6	1.2	3.8	1	3.9	1	3.8	1.1
block 33-42	3.3	1.2	3.7	1	3.6	1.1	3.5	1.1
43	4.2	1.2	4	1.1	4.1	1	4.1	1.1
44	4	1.1	4.2	0.7	4.2	1	4.1	1
45	4.1	1	4.2	0.8	4.2	1	4.2	1
46	3.6	1.1	3.7	0.9	3.6	0.9	3.6	1
47	3.7	1.1	3.6	1	3.7	0.9	3.7	1

48	3.9	1.1	3.9	1	4	1	3.9	1
49	3.4	1.2	3.5	1	3.4	1.1	3.4	1.1
50	3.6	1.1	3.9	0.8	3.8	1	3.8	1
51	3.5	1.3	3.7	1	3.7	0.9	3.6	1.1

G-9: Summary of Results from Polytechnic Student Respondents

	Gisborne		Auckland		Hawke's Bay		Summary	
Section 2:	avg.	std. dev	avg.	std.dev	avg.	std.dev	avg.	std.dev
3	3.2	1.2	2.8	1.4	2.8	1.3	2.9	1.3
4	2.3	1.2	2.8	1.3	2.2	1.2	2.4	1.2
5	3.1	1.3	3.1	1.3	3.3	1.1	3.2	1.2
block 3-5	2.8	1.3	2.9	1.3	2.8	1.3	2.8	1.3
6	4	1.1	3.9	1.2	4.1	0.8	4	1.1
7	3.4	1.2	3.9	1	3.5	1.1	3.6	1.1
8	3.1	1.2	3.2	1.3	3	1.2	3.1	1.2
9	3.4	1.2	3.6	1	3.2	1	3.4	1.1
10	3.1	1.1	3.4	1.1	3	1.1	3.2	1.1
block 6-10	3.4	1.2	3.6	1.2	3.4	1.1	3.5	1.2
11	4.1	1.2	4.3	0.9	4.1	1	4.2	1
12	3.9	1.1	4.3	0.9	3.9	1	4	1
13	3.6	1.2	3.6	1.2	3.9	1.1	3.7	1.2
block 11-13	3.9	1.2	4	1.1	4	1.1	4	1.1
14	3.2	1.3	3.4	1.2	3.8	1.1	3.5	1.2
15	3	1.2	3.2	1.2	3.6	1.2	3.3	1.2
16	3.1	1.3	3.6	1.1	3.8	1.2	3.5	1.2
block 14-16	3.1	1.3	3.4	1.1	3.7	1.2	3.4	1.2
17	3.8	1.1	3.7	1.1	3.6	1.1	3.7	1.1
18	4	1	3.9	1	4.1	0.8	4	1
19	1.9	1.1	2.4	1.3	2	1.2	2.1	1.2
20	3.7	1.1	3.8	1.1	4	1.1	3.8	1.1
21	2.8	1.3	3.1	1.3	2.8	1.5	2.9	1.4
22	3.7	1.2	3.6	1.1	3.8	1.1	3.7	1.1

23	3.4	1.3	3.5	1	3.5	1.3	3.5	1.2
block 18-23	3.3	1.3	3.4	1.2	3.4	1.4	3.3	1.3
24	3.9	1.1	3.7	1.2	3.7	1	3.8	1.1
25	3.7	1.2	3.5	1.1	3.1	1.1	3.4	1.1
26	2.7	1.3	2.9	1.2	2.4	1.1	2.7	1.2
block 24-26	3.4	1.3	3.4	1.2	3.1	1.2	3.3	1.2
27	4.1	1	4	1.1	4	0.9	4	1
28	3.3	1.2	3.7	1	3.5	1	3.5	1.1
29	3.1	1.4	3.1	1.3	3.3	1.2	3.2	1.3
block 27-29	3.5	1.3	3.6	1.2	3.6	1.1	3.6	1.2
30	3.8	1.1	3.8	1.2	3.7	1	3.8	1.1
31	2.6	1.4	3	1.5	2.6	1.4	2.7	1.4
32	3	1.4	3.4	1.6	2.6	1.4	3	1.5
block 30-32	3.1	1.4	3.4	1.4	3	1.4	3.2	1.4
33	4.2	0.9	4.1	0.9	4.2	0.9	4.2	0.9
34	3.5	1.2	3.6	1.2	3.6	1.1	3.6	1.1
35	3.8	1.1	4	1	3.9	0.8	3.9	1.1
36	4.1	0.9	4	0.9	4.1	0.8	4.1	0.9
37	3.7	1	3.6	1.1	3.7	1	3.7	1.1
38	3.7	1.2	3.5	1.1	3.3	0.9	3.5	1.1
39	3.6	1.2	3.5	1.1	3.7	1	3.6	1.1
40	4.4	0.8	4.2	1	4.1	0.8	4.2	0.9
41	3.1	1.3	3.6	1.2	3.9	0.9	3.6	1.2
42	4.1	1.1	4	1.1	4.3	0.8	4.1	1
block 33-42	3.8	1.1	3.8	1.1	3.9	1	3.8	1.1
43	4.4	0.9	4.4	0.9	4.5	0.8	4.4	0.9
44	4.4	0.8	4.4	0.8	4.3	0.7	4.4	0.9
45	4.4	0.9	4.6	0.8	4.6	0.6	4.5	0.8
46	4	1.1	3.7	1.1	3.7	1	3.8	1.1

47	4	1.2	4	1	4.3	0.8	4.1	1
48	4.2	1	4.3	0.8	4.4	0.8	4.3	0.9
49	4.1	1.2	3.8	1	3.7	0.8	3.9	1
50	4.2	1	4	1.1	4.2	1	4.1	1
51	4.2	0.9	4.1	0.9	3.9	1	4.1	0.9

G-10: Summary of Results from Industry and Community Respondents

	Gisborne		Auckland		Hawke's Bay		Summary	
Section 2:	avg.	std.dev	avg.	std.dev	avg.	std.dev	avg.	std.dev
3	3.8	1.1	3.3	1.2	3.6	1	3.6	1.1
4	2.5	1.1	2.4	1.2	2.7	1.1	2.5	1.2
5	3.2	1.3	3.4	1.1	3.2	1.1	3.3	1.2
block 3-5	3.2	1.3	3	1.3	3.2	1.1	3.1	1.2
6	3.8	1.4	4.3	0.8	4.1	0.7	4.1	1
7	3.2	1.3	3.8	1	4	0.8	3.7	1
8	3.3	1.1	3.5	1.1	3.4	0.9	3.4	1
9	2.8	1.2	2.9	1	2.7	1.1	2.8	1.1
10	3	1.2	2.6	1.1	3.2	0.9	2.9	1
block 6-10	3.2	1.3	3.4	1.2	3.5	1	3.4	1.2
11	4	1	4.3	0.9	4.1	0.6	4.1	0.9
12	4	1	4.2	0.8	3.9	0.8	4	0.9
13	3	1.3	3.6	0.9	3.5	1.1	3.4	1.1
block 11-13	3.7	1.2	4	0.9	3.8	0.9	3.8	1
14	3.4	1.2	3.8	0.9	3.5	1	3.6	1.1
15	3.3	1.2	2.4	1	3.2	1	3.3	1.1
16	3.5	0.9	3.6	1.1	3.4	1	3.5	1
block 14-16	3.4	1.2	3.6	1	3.4	1	3.5	1.1
17	3.6	1.1	3.7	1.2	3.7	0.9	3.7	1.1
18	3.8	1.1	4.2	0.9	4	1	4	1
19	2.1	1.3	2.2	1.1	2.2	1.2	2.2	1.2
20	4.1	1	3.9	1	2.7	1.1	2.6	1.3
21	2.5	1.3	2.5	1.3	2.7	1.1	2.6	1.3
22	3.8	1.1	4.1	0.9	4.1	0.9	4	1
23	3.2	1.1	3.6	1	3.9	0.7	3.6	0.9

block 18-23	3.3	1.4	3.4	1.3	3.5	1.2	3.4	1.3
24	4.1	1.2	4.4	0.6	4.1	0.8	4.2	0.9
25	3.6	1.1	3.9	0.9	3.6	0.8	3.7	1
26	2.4	1.2	2.4	1.1	2.5	1	2.4	1.1
block 24-26	3.4	1.4	3.6	1.3	3.4	1.1	3.4	1.3
27	4.2	0.8	4.4	0.8	4.3	0 .9	4.3	0.8
28	3.5	1.1	3.3	1.3	3.5	1	3.4	1.1
29	3.3	1.2	3.1	1	3.7	1	3.4	1.1
block 27-29	3.6	1.1	3.6	1.2	3.8	1	3.7	1.1
30	3.5	1.2	3.6	1.3	3.3	1.2	2.4	1.4
31	2.4	1.4	2.6	1.4	2.3	1.3	2.4	1.4
32	2.7	1.3	2.6	1.5	2.7	1.4	2.6	1.4
block 30-32	2.9	1.4	2.9	1.5	2.8	1.3	2.9	1.4
33	3.9	1	4.1	1	3.9	0.8	4	0.9
34	3.6	0.9	3.9	1	3.4	0.9	3.6	1
35	3.9	1.1	3.8	0.9	3.9	0.7	3.8	0.9
36	3.9	1	4.1	0.8	3.7	0.8	3.9	0.8
37	3.5	1	3.5	1.1	3.2	0.9	3.4	1
38	3.3	1	3.5	0.9	3	0.8	3.3	0.9
39	3.6	1.1	3.9	0.8	3.6	0.7	3.7	0.9
40	3.8	1.1	4.2	0.8	3.8	1	3.9	1
41	3.6	1.3	3.7	1.3	3.4	0.9	3.5	1.2
42	4	1	4.5	0.7	4.3	0.7	4.3	0.8
block 33-42	3.7	1.1	3.9	1	3.6	0.9	3.7	1
43	4.4	0.8	4.5	0.8	4.3	0.8	4.4	0.8
44	4.2	0.8	4.4	0.8	4.3	0.7	4.3	0.7
45	4.3	1	4.5	0.6	4.4	0.5	4.4	0.7
46	3.5	1.1	3.6	1.2	3.7	0.9	3.6	1.1
47	3.7	1	4.2	0.9	3.8	0.8	3.9	0.9

48	4.1	1	4.5	0.7	4.3	0.6	4.3	0.8
49	3.8	0.9	4.1	0.9	3.8	0.9	3.9	0.9
50	3.9	1.2	4.5	0.7	4.2	0.8	4.2	0.9
51	3.8	1	4.2	1	3.9	0.8	3.9	0.9

G-11: Summary of Results from Polytechnic Staff Respondents.

	Gisborne		Auckland		Hawke's Bay		Summary	
Section 2:	avg.	std.dev	avg.	std.dev	avg.	std.dev	avg.	std.dev
3	4	0.9	3.7	1.1	3.5	0.9	3.7	1
4	3	1	3.7	0.9	3.1	1.1	3.3	1.1
5	3.7	1.1	4	1.2	3.9	1	3.9	1.1
block 3-5	3.6	1.1	3.8	1.1	3.5	1.1	3.6	1.1
6	4.6	0.5	4.4	0.8	4.5	0.6	4.5	0.7
7	3.1	1.2	3.8	0.9	3.6	0.8	3.5	1
8	3.3	1.1	3	1.1	3.5	1.1	3.3	1.1
9	2.8	1.1	2.5	1	2.7	0.9	2.7	1
10	3	1	3	1.1	3	1	3	1
block 7-10	3.4	1.2	3.3	1.2	3.5	1.1	3.4	1.1
11	4.1	0.9	3.4	1	3.8	0.9	3.7	0.9
12	3.9	0.8	3.8	0.9	3.7	0.8	3.8	0.8
13	3.2	1	3.1	1.1	2.9	1.2	3	1.1
block 11-13	3.7	1	3.4	1	3.5	1.1	3.5	1
14	3.8	0.9	3.9	0.9	4	0.8	3.9	0.9
15	3.8	0.9	3.5	1	3.9	0.9	3.7	0.9
16	3.7	1.1	3.8	1	3.7	0.9	3.7	1
block 14-16	3.7	1	3.7	1	3.8	0.9	3.8	0.9
17	3.7	0.9	2.7	1.1	3.7	1	3.4	1.1
18	4.2	0.8	4.3	0.7	4.3	0.6	4.3	0.7
19	1.6	0.8	2.2	1.3	2.2	1	2.1	1.1
20	4.1	0.7	4.2	0.9	4.2	0.7	4.1	0.8
21	2.2	1	2.3	1.4	2.4	1	2.3	1.2
22	4.4	0.7	4.5	0.7	4.5	0.7	4.5	0.7
23	3.2	1	3.6	1	3.6	1	3.5	1

block 18-23	3.3	1.4	3.5	1.4	3.5	1.2	3.5	1.3
24	4.7	0.7	3.9	1	4.4	0.7	4.3	0.8
25	4.4	0.7	3.7	1	4.1	0.9	4	0.9
26	3	0.9	2.8	1	3.2	1.1	3	1
block 24-26	4	1.1	3.4	1.1	3.9	1	3.8	1.1
27	4.3	0.7	3.9	1.3	4.3	0.7	4.2	1
28	3.3	1	3.5	1	3.4	0.9	3.4	0.9
29	3.4	1	4	1	3.7	0.8	3.7	1
block 27-29	3.7	1	3.8	1.1	3.8	0.9	3.8	1
30	4.1	0.8	3.5	0.9	4.1	0.8	3.9	0.9
31	2.8	1.4	1.7	1	2.6	1.3	2.3	1.3
32	3.5	1	2.1	1.1	3.4	1.3	3	1.3
block 30-32	3.5	1.2	2.4	1.3	3.4	1.3	3.1	1.4
33	4.3	0.7	4.3	0.9	4.1	0.7	4.2	0.8
34	3.8	0.8	3.4	1	3.5	0.9	3.5	0.9
35	4.3	0.6	4.3	1	4.3	0.6	4.3	0.8
36	4.2	0.6	4	0.9	4.2	0.7	4.3	0.8
37	3.8	0.9	3.8	1.1	3.9	0.7	3.9	0.9
38	3.7	0.8	3.4	1	3.3	0.9	3.4	0.9
39	3.9	0.7	3.7	1.1	3.8	0.8	3.8	0.9
40	4.5	0.8	4.3	1	4.4	0.6	4.4	0.8
41	4	1.1	3.9	1.1	3.9	1	3.9	1.1
42	4.3	0.8	4.2	0.9	3.8	1.1	4.1	1
block 33-42	4.1	0.8	3.9	1.1	3.9	0.9	4	0.9
43	4.7	0.6	4.6	0.7	4.7	0.5	4.7	0.6
44	4.4	0.6	4.4	0.8	4.2	0.7	4.3	0.7
45	4.3	0.7	4.1	0.9	4	0.8	4.1	0.8
46	3.9	1	3.4	1	3.7	0.9	3.6	1
47	4.4	0.6	4.3	0.9	4.5	0.6	4.4	0.7

48	4.6	0.6	4.4	0.9	4.6	0.5	4.5	0.7
49	4.3	0.7	4	0.8	4	0.7	4.1	0.7
50	4.5	0.5	4.2	0.9	4.3	0.6	4.3	0.7
51	4.2	0.6	4	1.1	4.2	0.8	4.1	0.9