

TANZ

Student Performance Funding

December 2004

Glossary of Terms

Goals	An entity's visions of what it wants to achieve.
Objectives	Are the measurable, achievable, time referenced and specific outcomes of a process. For polytechnics, these include what the government (and other stakeholders) and students are aiming to achieve through education.
Outcomes	The benefits and consequences of the outputs applied, for polytechnics, in an educational and social context.
Outputs	The services and products produced.
Processes	The way the institution (in this case, the tertiary education institution) operates to provide outputs, achieve outcomes and meet objectives.
Student Objectives	What students are aiming to achieve by undertaking their study.
Student Outcomes	What students take away from their polytechnic experience (the result of their studies).
TEC Outcome Objectives	TEC has defined a number of education outcomes as part of its Tertiary Education Strategy, but because the outcomes have not yet been assessed, they are described as outcome objectives.

Disclaimer

This report has been prepared by the Tertiary Accord of New Zealand (TANZ) for the purposes outlined in the Introduction section.

The views expressed in the report are those of TANZ and not necessarily the wider polytechnic sector. There has been no consultation with the wider polytechnic sector to date.

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1 Executive Summary

Introduction of a Performance-Related Element into Student Funding

1.1 The government has indicated it is looking to introduce a performance-related element into Student Component Funding and Industry Training Funding, as part of the development of an Integrated Funding Framework. The government's stated aim for the performance-related funding element is "to provide incentives for providers through the funding framework, with the objective that learners achieve better educational outcomes" (Hon Steve Maharey, 2003). This initiative is a key part of the government's Tertiary Education Strategy.

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1.2 TANZ acknowledges the government's intention to introduce a performance-related element into student funding. TANZ has reservations, however, about the recommended system based on its analysis of international experience in this area. Notwithstanding these reservations, TANZ wishes to provide positive support in the development of systems which best safeguard the interests and aspirations of all tertiary students.

1.3 TANZ does not believe that performance-related funding based on completions and retentions, as currently measured, will be successful in creating incentives that motivate improvements in educational outcomes for tertiary students in New Zealand. This view is based on a search of the international literature relating to the application of performance measures. The research found seven countries in which performance based funding has been tried and not deemed to have achieved its objectives. In these instances, the authorities have either abandoned the approach or scaled back the extent of the performance related component. South Carolina (in the USA) was an exception. There student performance has improved and there is evidence that this is as a result of linking all institutional funding to 37 quality indicators.

1.4 An examination of the way New Zealand polytechnics operate suggests the costs of implementing a funding system based on completions and retentions could outweigh the benefits.

1.5 TANZ, therefore, has focused on the way forward to design and implement a performance-based funding system that would successfully achieve the Government's objective of achieving better educational outcomes for learners.

Effective Implementation of Performance-Related Funding

1.6 The effective implementation of a performance-related funding system requires consideration of the:

- system design;
- incentives it creates;
- compliance costs; and
- whether the system is effective in setting out what it intended to.

The design of the system needs to account for the differences between education providers.

1.7 The nature and clientele of different education providers are diverse and, therefore, valid measures and incentives are likely to differ between provider types.

1.8 Tertiary educational providers have different strategic goals and focus on different student outcomes. Consistent with these, they provide different educational content; and the characteristics of students who attend different institutions vary significantly. These differences are noted in the Minister of Education's *Participation in Tertiary Education* (2003) report, which observes that:

1.9 "The tertiary education sector... has the most diverse range of learning objectives, and the most diverse set of people and factors influencing it."¹

Performance measures need to be meaningful indicators of student outcomes and must create incentives which impact positively on behaviours that will enhance student outcomes.

1.10 An understanding of what motivates student performance will enable the goals and objectives of tertiary education providers and government to be translated into measurable outcomes (covering student performance and other agreed performance dimensions). From these, clear measures can be developed to monitor and report on how successful an education provider has been in achieving its own, and government specified, student outcomes.

1.11 Education providers have no control or influence over many of the factors that impact on student learning, such as family, community or religious commitments and difficulties with access to education. If performance measures do not account, or make adjustments, for these factors, there is a risk that the measures will create incentives that could actually discourage improvements in student performance and provide barriers to student participation in tertiary education.

There is a risk that the compliance costs of the performance-related funding system will outweigh the benefits

1.12 The international literature search established that, based on the experience described to date, linking student outcomes to funding does not conclusively result in improvements in student performance. Further, there do not appear to be performance measures that have already been tested that could easily and readily be adapted in the New Zealand tertiary education environment, and especially for the polytechnics. Therefore, there is a risk that given the small proportion of funding which is proposed to be linked to student performance, the costs of implementing the system will outweigh the benefits.

Ultimately, the key measure of the effectiveness of polytechnic performance is whether, over time, student outcomes are improving.

1.13 TANZ would like to work in a more collaborative way with the Ministry of Education and TEC. This means, firstly, defining student performance in relation to polytechnic educational aims. Secondly, then, it would be important to define measurable polytechnic outcomes that could be monitored and funded to improve student performance. Given the

¹ Ministry of Education (2003). *Participation in Tertiary Education*, page 5.

currently fragile funding environment for polytechnics, TANZ believes strongly that any funding aimed at outcomes should be additional and used as a positive incentive, rather than punitively as currently proposed.

1.14 TANZ recommends that:

- further work is done on developing education provider performance measures that are linked to agreed government and education provider objectives for polytechnic students (such as the objectives identified by TANZ);
- outcomes are identified; including student outcomes, that are linked to defined institutional and government defined objectives;
- work is done to gain a greater understanding of the way engagement between polytechnics and their students leads to improvements in student performance and, from this, develop performance measures that are likely to motivate polytechnic behaviours that lead to the desired outcomes;
- work is done on understanding the difference between tertiary education institutions and, from this, assess whether generic performance measures for institutions are, in fact, valid; and
- the costs and benefits of the proposed performance funding arrangements are examined to ensure the system achieves its desired results and that it is an appropriate application of government funding.

2 Introduction

2.1 As part of the development of an Integrated Funding Framework, the government intends to introduce a performance-related element into both Student Component Funding and Industry Training Funding. The government's stated aim for the performance-related funding element is "to provide incentives for providers through the funding framework, with the objective that learners achieve better educational outcomes" (Hon Steve Maharey, 2003). This initiative is a key part of the government's Tertiary Education Strategy ("TES").

2.2 In March 2002, Cabinet asked the Tertiary Education Commission ("TEC") to work with a Technical Working Group and relevant agencies to produce a report on the development of performance measures and the indicators to be used for tertiary education funding.

2.3 The Technical Working Group's report (2003), titled *Introduction of a Performance Element to Tertiary Education Funding*, recommends a package of performance measures that are intended to be used to allocate a portion of the funding for tuition according to the providers' performance, with a view to "enhancing the provision of quality in terms of educational gains by learners"².

2.4 A set of indicators was recommended as the basis for performance funding. These encompass measures of course retention and course completion at a provider level, both overall and for priority students, and the results of a survey of graduate experience. It was also recommended that the performance element portion of tuition funding be 5%. This level was considered to be sufficiently material to influence provider behaviour, without overly focusing the tertiary education provider on the indicators to the detriment of their delivery against their agreed Charter and Profile.

2.5 A Sector Reference Group has been formed to examine the Technical Working Group's report and to provide advice to the Ministry of Education and TEC on the recommendations. The Sector Reference Group is now sitting to advise officials and act as a sounding board for the development of advice.

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2.6 The Tertiary Accord of New Zealand (TANZ) is an alliance comprising five New Zealand polytechnics. The Alliance's view of performance, and, in particular student performance, is focussed on optimising student outcomes. Successful achievement of these outcomes can be examined using a wide range of data, from top traditional academic achievement through to qualitative/anecdotal data around access, empowerment, engagement with learning, participation and human growth and development. Student outcomes are at the base of student performance and, as such, should be considered as key to the proposed changes to the government funding regime.

2.7 However, the international literature relating to the application of performance measures has only limited cases where student performance actually changes as a result of linking a proportion of funding to student performance. Based on these findings, TANZ does not believe that performance-related funding will be successful in creating incentives that motivate improvements in educational outcomes for tertiary students in New Zealand.

² Technical Working Group (2003). *Introduction of a Performance Element to Tertiary Education Funding*, page 8.

2.8 TANZ, however, acknowledges the government's intention to introduce a performance-related element into student funding. The focus of this report, therefore, is on the best way such a system can be implemented.

2.9 TANZ believes that the proposed performance component should be based on measures that create incentives for education providers to improve student performance and that are otherwise consistent with institutional objectives. It is important, then, that the drivers of any improvement in student performance are reinforced by the funding model eventually developed.

2.10 A poorly designed performance component of the funding system could have perverse effects in that it could incentivise behaviours which have no benefit for student outcomes. This may include financial rewards for inappropriate activities (such as those that lead to lowering academic standards) or penalties for what are, in fact, effective activities (such as providing access and additional learning support for at-risk students). These incentives are also likely to have adverse effects on staff morale, which is critical to an effective and innovative tertiary education system.

2.11 Further, New Zealand polytechnics operate on extremely tight margins and a small shift in overall funding could strongly impact their financial viability. A consequence is that it will affect their ability to increase support to students that enables them to enhance their performance. This is another reason why any changes in the funding formulas need to be thought through carefully.

Purpose of the Report

2.12 TANZ has retained the services of PricewaterhouseCoopers ("PwC") to facilitate its exploration of the key elements for developing and implementing student performance measures that reflect the range and depth of polytechnic student education, training and learning outcomes. In particular, TANZ is interested in understanding what is required to achieve better student outcomes and developing measures that motivate improvements and hence, do ensure better student performance.

Limitations

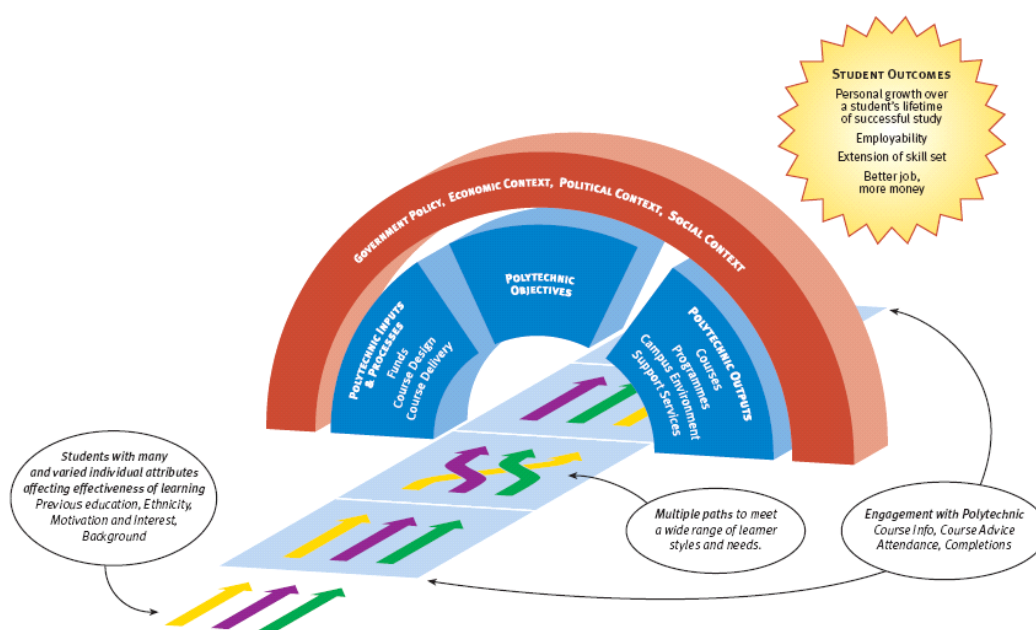
2.13 This report highlights a number of points and issues that are important to consider in designing a revised tertiary funding system for New Zealand. The recommendations are focused on the concepts which could shape the funding system, not about specific components (other than the student performance component) that comprise the proposed funding system.

2.14 Although our research has been extensive, it has not culminated in a comprehensive review of any particular funding regime in the international jurisdictions studied.

Inputs, Outputs and Outcomes Framework for Polytechnics

2.15 The following diagram identifies the relationships between inputs, outputs and outcomes for polytechnics. It illustrates that the relationship between polytechnic actions and student outcomes is complex and that there are a number of different factors that influence student outcomes.

Table 1: Inputs, Outputs and Outcomes Framework for Polytechnics



Source: The Open Polytechnic of New Zealand, 2004.

2.16 The diagram highlights the need for performance measures to focus on the levers that influence effective engagement with students. Examples of these levers are:

- the institution has a focussed, committed, motivated and inspirational teaching team and senior executive team;
- the institution has a structure in place that supports teaching delivery, without stifling academic freedom and creating bureaucracy;
- staff with the appropriate skills and attitude (e.g. well trained in their subject but also passionate and motivated) are employed to do the job;
- well-defined human resources policies/procedures in place including, staff recruitment, staff performance and staff discipline;
- staff development programmes exist that encourage good teaching practices and professional development;
- models of education delivery in place that compliment face-to-face teaching, catering for different learning needs that successfully engage students;

- marketing aimed at surveying student requirements as well as provider services to ensure the courses are designed to meet educational needs as analysed from the surveys.

2.17 These are only a few of the levers which an institution can control and use to influence engagement with students. There are also a number of important external factors that impact in student behaviours, which polytechnics must be mindful of and flexible enough to accommodate³.

³ For example, in the current labour market with low unemployment, polytechnic students will be offered employment opportunities before they finish a course or complete a diploma or degree.

3 The Proposed Performance Indicators

3.1 In 2003, the Technical Working Group recommended a package of performance indicators and measures that are intended to be used to allocate funding for tuition according to provider performance. The Group concluded that it would be better to start performance measurement with a small set of indicators that were readily acceptable. This allows for further measures to be developed in the future.

3.2 The following table shows the indicators and benchmarks that the Technical Working Group recommended.

Table 2: Indicators and Benchmarks Recommended by the Technical Working Group

Performance Indicators	Learner Dimension	Proposed Benchmark
Successful course completions	All learners	60%
	Maori learners	60%
	Pacific learners	60%
	Learners with disabilities	60%
Course retention	All learners	75%
	Maori learners	75%
	Pacific learners	75%
	Learners with disabilities	75%
Graduate Experience Questionnaire	All learners	90% of programmes with positive mean score on the four scales
	Maori learners	90% of programmes with positive mean score on the four scales
	Pacific learners	90% of programmes with positive mean score on the four scales
	Learners with disabilities	90% of programmes with positive mean score on the four scales

Source: Technical Working Group, 2003.

3.3 The report recommends that the same performance indicators and benchmarks should be set for all tertiary education organisations (“TEOs”).

3.4 It is anticipated that the completion and course retention indicators will be drawn from the annual Single Data Return (“SDR”) reporting arrangement. Due to reporting timeframes, it is proposed that the performance element for a particular academic year should be based on SDR and survey results available, albeit that they will relate to different years. This is summarised in the following table.

Table 3: Time Lag for Performance Measures

Year	Indicators	Results Availability	Performance Element Funding Year Impacted	Time Lag
2005	Course completion and course retention	April 2006	2007	2 years
2004	Graduate Experience Questionnaire	September/ October 2005	2007	3 years

Source: Technical Working Group, 2003.

3.5 The ‘at risk’ amount proposed by the Technical Working Group is 5% of total funding. This amount was selected because it was seen by the Group as:

- large enough to indicate to the TEOs that a focus on educational gain by learners is important;
- sufficiently conservative so as not to jeopardise the financial viability of TEOs; and
- in line with international practice.

3.6 It is proposed that in order to qualify for performance funding, a TEO must report satisfactorily against all indicators. If a TEO fails one or more indicator, a process of dialogue with TEC should be triggered, which will examine the reasons for particular failures. Funding would be withdrawn where improvement is not secured in the following year’s results.

Issues

3.7 The Technical Working Group recommendations raise a number of issues:

- It is recommended that performance measurement should start with a small set of readily acceptable indicators. This would reduce the cost of the initial implementation and allow further measures to be developed in the future. It is not clear, however, who the indicators are readily acceptable to. Although most TEOs keep measures of completion and retention, they are not currently measured in a consistent way. Further, a plan for developing future measures has not been included in the recommendations. This is important because introducing new measures of performance may impose greater compliance costs on TEOs and compliance costs may differ between TEOs.
- It has also been recommended that the same performance indicators and benchmarks should be set for all TEOs. There are, however, a number of key differences between institutions, which are of such a nature that student outcomes could be perversely impacted with an inappropriate generic funding formula (this is developed further in Section 8). Greater consideration needs to be given to how the recommendations will affect different providers.

- It is proposed that funding would be withdrawn from a TEO if it failed one or more indicators and did not show improvement in the following year. However, because there is a time lag between the years the indicators relate to and the year they impact upon, any changes TEOs introduce to try to improve their performance will not be fully captured by the indicators for three years. For this reason, further consideration should be given to the process and timing of withdrawing funding.
- The 'at risk' amount proposed by the Technical Working Group is 5% of total funding. Our review of international literature relating to performance measures shows that there is a high probability that linking only a small amount of funding to student outcomes will result in the cost of implementing such a system outweighing the benefits it is designed to achieve (this is developed further in Sections 10 and 11).

3.8 Most importantly, though, the international literature review relating to the application of performance measures (Section 10 of this report) found only limited instances where student performance actually changed as a result of linking a small proportion of funding to student performance. It is important to note, however, that performance measures are often aimed at institutional performance, because this is understood to be the driver that can be managed. Nevertheless, to achieve outcomes, it is necessary to understand the implications for student performance as well.

3.9 There is logic in the view that funding linked to student performance (completions and retentions) instead of inputs (enrolments) would re-focus tertiary education providers. International experience to date has tried a wide range of different student performance measures but our search found no measure that conclusively led to improvements in student performance. Further, what evidence there was suggests that more work is required to find an appropriate measure for ensuring what improvements in polytechnic performance leads to better outcomes for their students.

3.10 The following sections examine how performance funding measures could be further developed to ensure that they promote the objectives and outcomes of education providers and government that motivate better student performance.

4 Motivating Improved Student Performance

4.1 The government's aim for introducing performance-related funding is to incentivise educational providers to ensure learners achieve better educational outcomes.

Measuring Performance

4.2 To build performance measures that motivate better educational outcomes for students, it is necessary to consider the key factors about an education provider's activities that impact on student performance. In the context of polytechnics' activities, these include:

Internal factors – those factors that the polytechnic has some control over, such as the infrastructure that supports the learning environment, and the number and quality of teachers (typically the 'inputs' to the overall equation).

External factors – those factors that the polytechnic has limited or no control over, for example family priorities and background.

Direct factors – those factors that directly influence student behaviour, such as fees and course withdrawal rules.

Indirect factors – those factors that cause the polytechnic to improve its engagement with students, such that they want to improve their performance.

4.3 Generally speaking, behaviour can be influenced in a number of ways including:

- financial rewards (or disincentives) to education providers; and
- non-financial rewards (or disincentives), for example reporting regimes/scoreboards, course feedback etc.

4.4 It is common for organisations to try to influence behaviour using a combination of financial and non-financial rewards, recognising that 'one size does not fit all'. That is, whilst some organisations and staff will react well to financial rewards, others focus on non-financial performance measures, and the best way of influencing their behaviour might very well be by using other means. Clearly, for any type of reporting or reward system to work, it must be based on an understanding of what motivates the desired behaviour in the first place.

4.5 From a wider tertiary education strategy point of view, performance measures need to relate to outcomes that encompass both the student and other relevant dimensions. Measures comprising a mixture of outputs and outcomes are likely to be the most appropriate. For example, an acceptable funding component for the measurement of performance might include reference to the following:

Student outputs and outcomes + Stakeholder outcomes + Completion rates + Institutional / staff outputs and outcomes

4.6 Weights for each component would need to be taken into account in such a formula, and these would be key to its accuracy as a representation of performance.

4.7 It is also necessary to report on performance measures over a period of time to establish a baseline position. Only then will it be possible to use the measures to monitor the success of any operational changes designed to improve student (or other defined) outcomes and to identify an approach to funding. This is important because, to be effective, the proposed financial incentives should have a positive impact on an education provider. For example, teaching staff are a direct input into a student's educational experience. Motivating the behaviour of teachers is likely to be a key factor for influencing the quality of the learning experience for students. In this respect, a funding formula that leads to reduced resources, could result in a reduction in teaching numbers (and quality), higher student to staff ratios, and a generally less productive work environment, ultimately impacting on student performance.

4.8 In terms of improving overall performance, the challenge is to design performance measures which focus on the factors or levers (inputs and outputs) that can be changed to motivate and improve performance over time, leading to better outcomes.

4.9 The next section of this report examines the goals and objectives of polytechnics and how these relate to student performance.

5 Polytechnic Goals and Objectives

5.1 TANZ undertook an exercise to define the key goals of polytechnic education, selecting from the wide range of objectives included in the Charter of Institutes of Technology and Polytechnics, polytechnic annual reports and TEC's Tertiary Education Strategy ("TES"). The focus of this exercise was on those objectives and activities with the potential to influence student outcomes.

5.2 TANZ identified four key goals for polytechnics, which are listed in the table below.

Table 4: TANZ Key Goals for Polytechnics

TANZ Key Goals for Polytechnics	
1	Personal growth and development of students
2	Lifetime learning opportunities
3	Ensuring graduates are job-ready, with up-to-date skills
4	Commitment to vocational education

Source: TANZ, 2003/04.

5.3 These goals can be expressed as objectives, which are measurable, achievable and time referenced. Information about these high level goals is reported in polytechnic annual reports and as such, is already monitored. Further, there is a consistent link between Charter and Profile goals and objectives and annual report goals and objectives for most polytechnics.

5.4 As part of the TES, the government has developed six strategies for tertiary education, which are listed in the table below.

Table 5: The Tertiary Education Strategy

The Tertiary Education Strategy	
1	Strengthen system capability and quality
2	Te Rautaki Maturanga Maori. Contribute to the achievement of Maori development aspirations
3	Raise foundation skills so that all people can participate in our knowledge society
4	Develop the skills New Zealanders need for our knowledge society
5	Educate for Pacific Peoples' development and success
6	Strengthen research, knowledge creation and uptake for our knowledge society

Source: Tertiary Education Strategy 2002/07, 2002.

5.5 TEC's strategies are supported by 35 outcome objectives within the Tertiary Education Strategy. These are included in Appendix B to this report.

5.6 There is consistency between the strategies and goals identified by TANZ and the strategies and outcome objectives that TEC has articulated in relation to tertiary education. In this respect, it can be concluded that TANZ (and the wider polytechnic sector) and TEC/Government objectives for education are, in principle, aligned.

5.7 From a wider educational strategy point of view, there are other objectives that could be considered, including staff/institutional and stakeholder objectives. This report does not focus on these dimensions per se. Nevertheless, in terms of measuring overall polytechnic performance, these dimensions also have the potential to make a difference to student performance and applicable measures supporting these dimensions need to be considered.

5.8 In conclusion, there is already considerable alignment between TES, TEC and polytechnic objectives for student performance. This suggests that a concerted effort to develop measures of student performance that relate to these objectives has the potential to improve the match between what educational providers aim to do, with what they achieve. This, then, would provide a basis for designing a funding formula that ensures students achieve better educational outcomes. The next section focuses on how these educational outcomes are defined.

6 Student Objectives

6.1 Recent governments have focussed increasingly on outcomes to measure performance across a range of government activities. The reason for this is that outcomes are seen as a better measure for assessing what government policies, services and products actually achieve, than inputs and outputs. In the context of tertiary education, this assumes that government and student outcomes are the same.

6.2 Outcome measurement for education, however, is still in its nascent stages. This is the case, whether the outcome measurement relates to government outcomes, provider outcomes, stakeholder outcomes and/or client (student or other user) outcomes.

6.3 To understand what leads to better educational outcomes for learners, the drivers or influencing factors need be described and defined. This will provide the basis for goals and objectives to be translated into measurable outcomes (covering student performance and other agreed performance dimensions). From these, clear measures can be developed to monitor and report on how successful an education provider has been in achieving its and government specified student outcomes.

6.4 Before quantification and measurement of outcomes is possible, the desired outcomes of tertiary education need to be identified and measurements of those outcomes taken over a period of time. Only when there is time series data covering a number of years, can events be isolated in a way that shows the links between what education providers do and what students learn.

6.5 TANZ identified the following four key student outcomes, which are aligned to the four key goals it defined for polytechnic education:

Table 6: TANZ Key Student Outcomes

TANZ Key Student Outcomes	
1	Personal growth over a student's lifetime
2	Getting a job / employability (increasing employment and employability)
3	Extension of skill-set (boosting existing skills, raising foundation skills)
4	Gaining a better qualification and greater financial rewards

Source: TANZ, 2003/04.

6.6 Measures which relate to these outcomes can be identified and evaluated. The following sections look at existing measures of student performance. The Technical Working Group's choice of measures has moved the debate about educational achievement beyond inputs and outputs. Retention and completion rates are intermediary outcome measures, and the student satisfaction survey covers a range of outcomes.

7 Output Measures

7.1 Overseas and local experience shows that besides reporting on inputs (eg enrolments), output measures are frequently used by tertiary education providers to describe the success of an institution. It appears that outputs are measured instead of outcomes because they are easier to define, record and analyse.

7.2 In New Zealand, it is common for TEIs to report on student retention and student completion rates (often in their annual reports). This may be one of the reasons that retention and completion rates have been included in the performance measures to be linked with funding, as recommended by the Technical Working Group.

7.3 A report by the Ministry of Education (2003), titled *Retention, Completion and Progression in Tertiary Education*, observes that it is important to measure retention and completion rates because they provide indicators:

- “of the rate at which New Zealand’s tertiary education systems produce qualifications and skill”;
- “of the internal and quality of the tertiary education system, **while recognising that there are many factors outside of the system that will impact on outcomes and that retention and completion are not always good markers of quality and that these factors need to be read in the context of other indicators**” (emphasis added);
- “of value for money, that is, how well New Zealand’s investment in tertiary education is contributing to gains in qualifications and skills”;
- “of how experiences and outcomes vary for and between different groups of students over time”;
- “of how the New Zealand tertiary education system performs in comparison with other countries in the context of a global knowledge economy”; and
- “that can help shape decision-making for a range of purposes, including government strategy, policy development and investment, provider practice and development, and student decision-making”.⁴

Standardised Reporting

7.4 However, on a practical level, from the standpoint of fairness on funding, standardised reporting on retention and completion will be required before they could be used as performance measures. For example, there is not a common definition of completion rates in current reporting, as evidenced by the variability in completion rate, reporting standards and the timing of reporting for the five TANZ members:

⁴ Ministry of Education (2003) *Retention, Completion and Progression in Tertiary Education* (Ministry of Education, Wellington) page 11.

Table 7: Completion Rate Reporting Standards of the TANZ Members

Institution	Description in Annual Report	Completion Rate	Entity
MIT	Percentage completing to required standard of attainment	73% a	Institution
Otago	Pass rate	89% b	Institution average
TOPNZ	Completion rate	73% c	Course rates reported, simple average calculated
UCOL	Successful completion	63% d	Output class category rates reported, simple average calculated
CPIT	Not reported as of 2003	Not Reported	Not Reported

Source: a) Manukau Institute of Technology 2001 Annual Report.
 b) Otago Polytechnic 2003 Annual Report.
 c) The Open Polytechnic of New Zealand 2002 Annual Report.
 d) Universal College of Learning 2003 Annual Report.

Use of Retention and Completion Rates as Performance Measures

7.5 There are a number of valid positive and negative arguments for using retention and completion rates as performance measures, which are summarised in the following table.

Table 8: Arguments For and Against the Use of Retention and Completion Rates

Use of Retention and Completion Rates
<p>Positive Arguments</p> <ul style="list-style-type: none"> • Easy to measure • Most tertiary education institutions currently report retention and completion rates (although definitions differ) • Minimal additional compliance costs because retention and completion rates are already reported • Will provide focus on improving the general level of retention and completion (and therefore qualifications)
<p>Negative Arguments</p> <ul style="list-style-type: none"> • Access may be denied/restricted if the belief is the student does not have the ability to complete their studies • The financial impact on an institution could be negative, affecting overall viability • There are other, more appropriate, ways of measuring success in tertiary education than retention and completion rates (such as outcomes) • Variation in current completion rate reporting exists – it is not an exact measure

7.6 In terms of measuring successful student performance or outcomes, retention and completion rates indicate whether a student remained enrolled and passed or failed a course. In this regard, these measures provide a useful measure of qualifications attained. Qualifications give confidence to employers about a student's ability (particularly with regard to vocational courses) and therefore are a relevant output to measure.

Adjustments to Retention and Completion Rates

7.7 New Zealand's relatively open access to enrolment and student loans have tended to increase the number of students with a focus on part-time course-based study and those trying to combine work with study. Students studying part-time and those trying to combine work with study are more likely not to complete their qualification than full-time students. Further, recent statistics in Britain show that the institutions with the highest drop-out rates were also the ones that generally excelled at attracting student from under-represented groups. This is evidence that completion goals can not be viewed in isolation from access goals⁵.

7.8 Therefore, the reasons why students do not complete their studies need to be considered, and adjustments made, before introducing retention and completion rates as performance measures. Factors such as the proportion of students studying part-time, the existence of commitments which will require students to take a break from study, the level of prior study and other differences amongst students will affect the measures and make exact comparisons between different types of education providers problematic.

Appropriateness of Retention and Completion Rates as Performance Measures

7.9 As one measure of performance, retention and completion rates are important. Nevertheless, they only tell part of the overall story, and in this respect, should only form a component of an overall student performance equation.

7.10 More importantly, however, measuring and funding based on retention and completion rates may have detrimental effects on institutions as education providers. A potential consequence of funding based on these rates, is that it creates an incentive for institutions to restrict access to those students likely to complete courses, which goes against key polytechnic and Government objectives for polytechnic courses. This concern is moderated in the Technical Working Group's recommendations by proposing an 'at risk' amount of 5% of total funding.

7.11 Further, there is great diversity in the programmes that polytechnics and universities offer, from unit standards to certificates, diplomas, degrees and post-graduate qualifications. Retention and completion measures do not capture the wide differences in requirements to achieve these various qualifications, or the different academic, demographic and educational backgrounds of students at the different institutions.

7.12 The following section examines the difference between institutional providers, in particular, the difference between polytechnics and universities in more detail.

⁵ Ministry of Education (2003) *Retention, Completion and Progression in Tertiary Education* (Ministry of Education, Wellington), page 12.

8 Difference Between Tertiary Education Providers

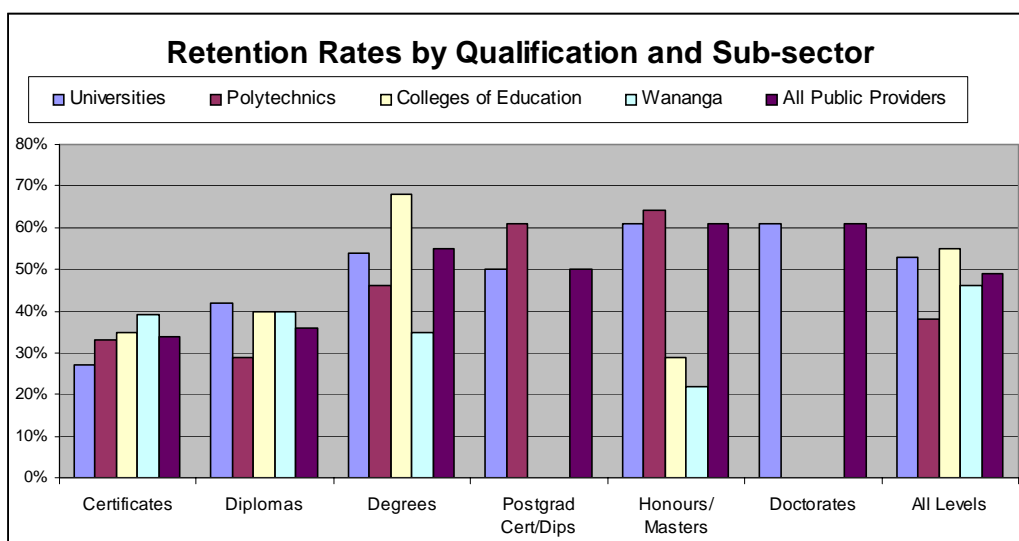
8.1 From a high level outcomes-based perspective it would be easy to view differing providers within the tertiary education sector as undertaking basically the same sorts of activities. However, tertiary education is provided in different ways to a range of different student types. The report *Participation in Tertiary Education* (2003) prepared by the Ministry of Education states that:

“The tertiary education sector is a diverse sector. Its provision ranges from informal, non-assessed community courses in schools through to four-year and longer advanced postgraduate degrees. It provides pathways for a large diversity of learners, from school leavers, to workers, unemployed, to students from overseas, to those pursuing an interest or hobby or more social interaction. It has the most diverse range of learning objectives, and the most diverse set of people and factor influencing it.”⁶

8.2 These differences mean that different education provider types have different strategic focus, education content and different levels and types of factors outside of the providers control, that influence student retention and completion.

8.3 The Ministry of Education has prepared the following tables, reporting estimates of retention and completion rates by qualification and institution for domestic students starting their qualifications in 1998. These tables show that retention and completion rates differ across different education provider types.

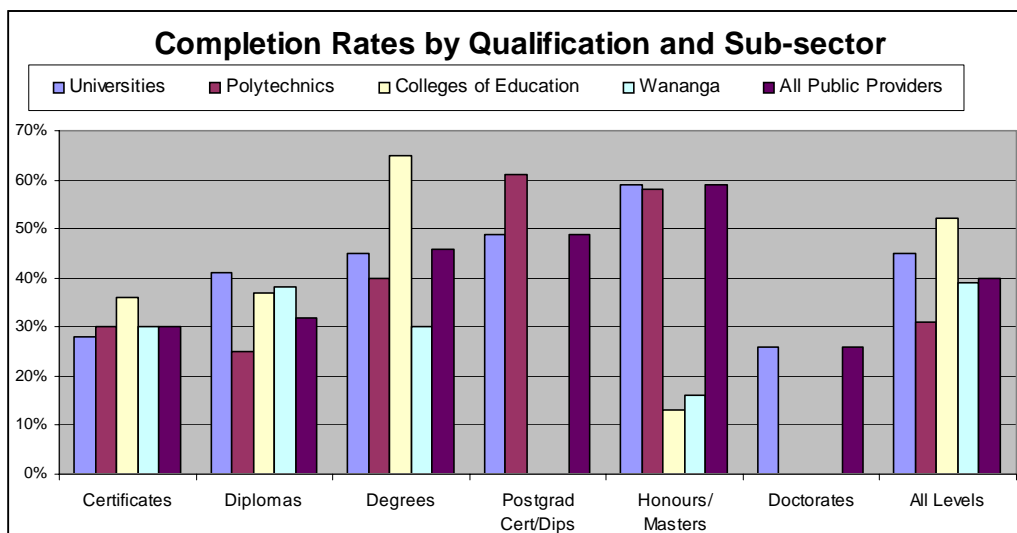
Table 9: Retention Rates by Qualification and Sub-sector



Source: Ministry of Education (2003) *Retention, Completion and Progression in Tertiary Education*.

⁶ Ministry of Education (2003). *Participation in Tertiary Education*. page 5.

Table 10: Completion Rates by Qualification and Sub-sector



Source: Ministry of Education (2003) *Retention, Completion and Progression in Tertiary Education*.

Polytechnics

8.4 The Ministry of Education has observed that polytechnics have the lowest completion rates at sub-degree level of any tertiary education provider type.⁷ However, the Ministry also notes that there is a need to make adjustments to the retention and completion rates:

“In particular, no adjustment has been made for part-time study and its effect on length of study and rates of completion.”⁸

8.5 There are a range of reasons why polytechnic students do not complete their studies. Many are either out of the control of the polytechnic or are consistent with tertiary education objectives.

8.6 Polytechnic surveys show that for personal reasons, it is often necessary for students to stop their study before the completion of their entire course. A student satisfaction survey completed by Colmar Brunton in 2004 for The Open Polytechnic of New Zealand found that 31% of students said there was nothing The Open Polytechnic could have done to prevent them not completing. Reasons that students do not complete their studies, which are outside of polytechnics control, include:

- family reasons/commitments, in particular to meet the needs of their children;
- religious / social reasons/commitments;
- the student begins working full time and cannot, or chooses not to, make the time to complete their studies.

⁷ Ministry of Education (2003). *Participation in Tertiary Education*. page 14.

⁸ Ministry of Education (2003). *Participation in Tertiary Education*. Page 19.

8.7 Recognising such constraints on students, a key feature of polytechnics is that they offer certificates, diplomas and degrees, and evening courses that allow students to defer their studies and pick them up at a later stage (in effect, roll-on, roll-off education is a means of engaging a wider range of students in achieving better learning outcomes).

8.8 Given the educational outcomes achieved, it is inappropriate to penalise tertiary education providers for students who do not finish their studies due to any of the reasons above. Therefore, to develop effective performance measures, regard must be given to the differing features of tertiary education provider’s students and outputs.

Key Differences between Polytechnics and Universities

8.9 TANZ has completed an exercise to distinguish the characteristics of polytechnics from those of universities. The key differences between polytechnics and universities are set out in the table below. The differences described by the table are of such a nature that student outcomes would be perversely impacted with an inappropriate generic funding formula.

Table 11: Key Difference Between Polytechnics and Universities

Difference	Polytechnics	Universities
Size	Generally speaking both campus size and number of EFTS are typically in the range of small to medium	Campus size and number of EFTS are typically larger
Location	Set up in locations to provide communities with a stepping stone to tertiary education, and to raise the skill level of communities. Campuses located in major and minor cities, and in rural areas	Campuses mainly located in major cities
Qualifications offered	Mostly Certificates and Diplomas, some Degrees and Postgraduate Qualifications	Mostly Degrees and Postgraduate Qualifications, some Certificates and Diplomas
Strategic drivers	Driven by local community / employers and the characteristics of local students	Driven by the academic goals and objectives of the university
Scale	Lower student to staff ratio, personalised experience, nurturing environment	Higher student to staff ratio, large lectures, “bulk delivery”
Content/focus	Vocational, practical, ‘teaching to do’, addresses regional skill and knowledge gaps, foundation education	Academic and research focussed, more theory based.
Scholarly activity	More applied, scholarship research, principally in support of degree programmes	Broad range of fundamental to applied research. Comparable in importance to teaching – staff equally accountable to research and teaching
Access	Few entry restrictions, second chance and foundation education	University entry requirements (bursary or equivalent)
Connections	Connected with community business, industry, schools	Connected with industry and research based institutions
Stair-casing	Strong stair-casing increasing	Limited stair-casing

Difference	Polytechnics	Universities
Attendance	Many part-time, ratio of students to EFTS = 4:1 ⁹	Most full-time, ratio of students to EFTS = 1.2:1
Students	Majority are mature students, many second chance learners, many working, 58% aged 25+, 42% under 25 ¹⁰	Some mature students, relatively high previous qualifications, 40% aged 25+, 60% under 25

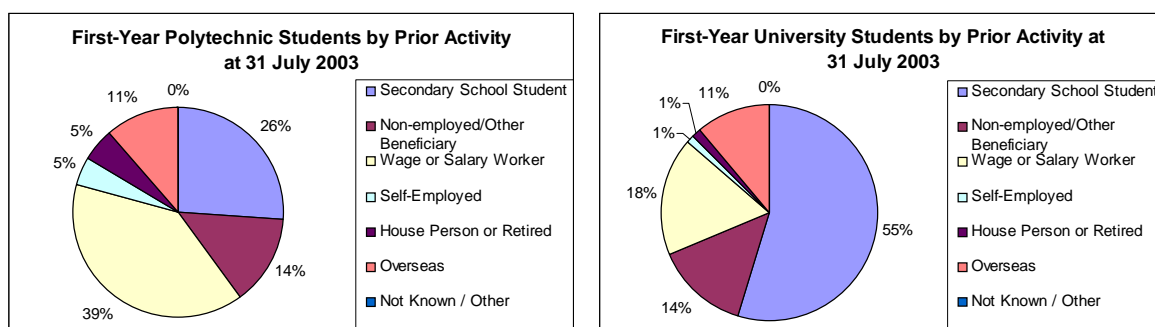
Students

8.10 A key distinguishing factor between polytechnics and universities are the characteristics of the students they enrol. The characteristics include:

- demographic characteristics;
- academic skills; and
- educational background.

8.11 For example, the following graphs provide the profiles of first year student's prior activities for polytechnics and universities.

Table 12: Profiles of First Year Student's Prior Activity for Polytechnics and Universities



Source: Ministry of Education, Tertiary Statistics.

8.12 The key features of these graphs are:

- 55% of first year university student's prior activity was secondary school pupil, compared with 26% for polytechnic students;
- 39% of first year polytechnic student's prior activity was as a wage or salary worker, compared to 18% for first year university students.

8.13 These graphs show that polytechnic students usually come from backgrounds with limited previous formal education, and often it has been some years since they were last

⁹ PwC source.

¹⁰ Ministry of Education, 31 July 2002.

involved in a formal training environment, whether that be 3 years since School Certificate or 15 years since an apprenticeship, for example.

8.14 These differences highlight the need to work through the complexities of the activities required to improve student performance for polytechnics before coming up with performance related funding measures. The discussion above also highlights that a generic performance measure for all TEOs may not be appropriate.

Conclusion

8.15 The discussion above shows that, in general, resources, approaches and methods of student engagement differ by educational institution type, and also within an institution type. Defining a standardised set of measures for both polytechnics and universities may not be the best approach for either measuring or monitoring performance of the institution. As a result, a standardised set that attempts to link performance to funding may lead to a reduction in learning outcomes, instead of the improvement that the government says is its intention.

8.16 The design of the performance measures needs to make adjustments for the difference between educational provider types, which include:

- different strategic drivers;
- different focus of education;
- differences in education content;
- differences in students.

8.17 Understanding these differences, in particular the differences in the ways that different institutions engage with their students, is important to understanding how to achieve improvements in educational outcomes for different institutions.

9 Outcome Measures - Student Satisfaction Surveys

9.1 The government's stated aim is to provide incentives for providers through the funding framework, with the objective that learners achieve better educational outcomes. Ultimately, the key measure of the effectiveness of polytechnic performance will be whether, over time, student outcomes are improving. This means that any funding focused on polytechnic tertiary education performance needs to be implemented in a way that motivates changes in behaviour, that is, changes in the way that education is provided that link with better educational outcomes for learners.

Student Satisfaction Surveys

9.2 There are two major surveys that individual polytechnics complete each year focused on gaining an understanding of the value that they have added to student performance:

- The Student Satisfaction Survey; and
- The Graduate Destination Survey.

9.3 The *Student Satisfaction Survey* is designed to capture the overall satisfaction of students whilst they undertake their studies. The survey typically covers a number of service delivery topics, such as course content, relevance, access to tutors/teachers and the quality of internal services (e.g. computing and library). The survey is mainly an internally focussed document, designed to provide feedback to management on whether the institution is providing the most relevant infrastructure, internal services and courses (these are a combination of inputs and outputs as described in Section 3 of this report). The Student Satisfaction Survey has limited reference to student outcomes, although there is some mention of outcomes, such as:

- improving career prospects;
- value of learning for a current or future job; and
- value of learning for personal enjoyment/growth/development.

9.4 The *Graduate Destination Survey* is designed to capture what students did after their study, relative to what they set out to achieve, and in this respect, goes to the heart of measuring student outcomes in added value terms. The key outcomes included in this survey are:

- increasing skills/knowledge for current job;
- receiving a nationally recognised qualification;
- improving chances of getting a job; and
- personal growth.

9.5 As well as the above surveys, in 2001, the Association of Polytechnics New Zealand (APNZ, now the Institutes of Technology and Polytechnics of New Zealand) coordinated a national survey of graduates on behalf of the polytechnic sector.

9.6 APNZ developed common questions to be included in individual institutional surveys, to enable aggregate sector information to be collated and analysed. The key aim was to determine the work or study circumstances of students who graduated from polytechnics:

- at the time they completed their qualification; and
- at the time the survey was conducted (typically 6 months after graduation).

9.7 A summary of results follows:

- for the 2000 study year, 2,400 valid responses (out of 6,266 distributed) were received, which equates to an overall response rate of 38.3%;
- at the time of *completing their programme*:
 - 53% of graduates were looking for work;
 - 26% were already working;
 - 11% were enrolled in another programme;
 - 10% were involved in 'other' activities such as family care.
- at the time of completing their survey:
 - 75% of graduates were in paid employment (22% were also continuing their studies);
 - 15% of graduates were continuing with their studies (no work at all);
 - 10% of graduates were involved in 'other' activities.

9.8 This information supports the four outcomes identified by TANZ (discussed in Section 6). They are:

Table 13: TANZ Key Student Outcomes

TANZ Key Student Outcomes	
1	Personal growth over a student's lifetime
2	Getting a job / employability (increasing employment and employability)
3	Extension of skill-set (boosting existing skills, raising foundation skills)
4	Gaining a better qualification and greater financial rewards

Source: TANZ, 2003/04.

9.9 As well as the surveys noted above, polytechnics publish annual reports covering a wide range of financial and non-financial information. The non-financial information is typically presented in terms of goals, and how well the polytechnic performed against those goals. The goals (or objectives) cover a wide range of tailored, institutional wide objectives or service performance statements, typically linked to the institution's statement of objectives.

9.10 It is challenging to establish consistency between all the different surveys and reports, and in particular, to examine and compare the effectiveness of polytechnic performance. This is, in part, due to:

- polytechnic annual reports are not standardised in terms of the content and format of their reporting;
- there are no requirements to include student satisfaction and/or student destination results in the polytechnic annual reports;
- where intermediary outcomes are reported (eg completion and retention rates), they are not defined and/or measured in the same way; and
- student outcomes are not required to be reported on.

9.11 If outcomes were reported, baseline positions and improvements to the baseline could be monitored.

Comparing Reporting Against Objectives

9.12 The existing satisfaction surveys are useful tools for gathering and analysing information about student outcomes. However, there are limitations with the current surveys that would need to be overcome before they could be used as a basis for gaining an understanding of the links between how education is provided and the student outcomes achieved.

- *Survey participation rates* – in 2002, not all institutions were involved in both surveys, as evidenced in the following table:

Table 14: Polytechnic Survey Participation Rates

Polytechnic	Student Satisfaction Survey	Graduate Destination Survey
Aoraki Polytechnic	Yes	Yes
Bay of Plenty Polytechnic	No	Yes, includes satisfaction questions
Christchurch Polytechnic Institute of Technology	No	Yes
Eastern Institute of Technology Hawke's Bay	Yes	Yes
Manukau Institute of Technology	Discontinued (a)	Yes
Nelson Marlborough Institute of Technology	Yes	Yes
Northland Polytechnic	Yes	Starting 2002
Otago Polytechnic	Yes	Starting 2002
Southern Institute of Technology	Information not obtained	
Tai Poutini Polytechnic	Yes	Yes but not regularly, not particularly helpful to them with

Polytechnic	Student Satisfaction Survey	Graduate Destination Survey
		moving students
Tairāwhiti Polytechnic	Yes	Yes
Telford Rural Polytechnic	Yes	Leavers form asks destination
The Open Polytechnic of New Zealand	Yes	Yes
Universal College of Learning	Yes	No
Waiariki Institute of Technology	Yes	No
Waikato Institute of Technology	Yes	Yes (b)
Wellington Institute of Technology	Yes	Yes
Western Institute of Technology at Taranaki	Yes	Yes
Whitireia Community Polytechnic	Yes	Yes

Note: a) MIT does not complete an institutional student satisfaction survey because the institution concluded that its institution-wide system of programme/course evaluation provided more meaningful data.

b) Also completed an Employer satisfaction survey for 1999 only.

The majority of New Zealand polytechnics participate in the Graduate Destination Survey, which typically includes some reference to outcomes.

- *Survey standardisation* - the Student Satisfaction survey and Graduate Destination survey reports are not standardised and, in this respect, individual institutions gather only the data that they find most useful. Survey standardisation was examined by the Technical Working Group in 2003 and changes were included in their recommendations.
- *Response rates* - the response rates are often not that high, which could potentially skew the decisions made (especially if funding was tied to the results of the survey). For example, in 2002, the following response rates were achieved:

Table 15: Response Rates to Student Experience and Graduate Destination Surveys

Institution	Survey type	Sample size	# Responses	Response %
UCOL	Student Experience	2,054	464	23%
TOPNZ	Student Satisfaction	12,295	3,205	26%
	Graduate Destination	9,081	3,172	35%
MIT	Graduate Destination	2,513	959	38%
Otago	Student Satisfaction	1,683	1,127	67%
CPIT	Student Satisfaction	3,965	3,258	82%
	Graduate Destination	1005	552	55% a

Source: Compiled from 2002 Annual Reports

a) CPIT actual response rate was closer to 63% as more surveys were received after reporting data.

In this respect, as a way of collating information in relation to outcomes, the surveys may be a useful tool. Their penetration to a wider audience, however, is disappointing.

- *Inclusion of outcomes in annual reports* - the results from the survey reports are not necessarily included in published annual reports.

Issues and Challenges

9.13 The key issues in relation to current student outcome reporting are:

- different institutional participation in the surveys;
- surveys are not standardised;
- response rates are low and hence, they could impact on financial stability if the response rates are used as a basis for informing decisions;
- outcome results are not necessarily included in annual reports; and
- even where outcomes are analysed, the links between polytechnic activities and the outcomes achieved are not fully described.

9.14 A further key issue is that there are no current, well-defined generic measures for linking polytechnics' performance to outcomes, such as the four key student outcomes identified by TANZ (discussed in Sections 5 and 6). That said, it is generally agreed that the key outcomes identified by TANZ could be implemented in a way that meets with the government's stated aim of providing incentives through the funding framework while also meeting the objective that learners achieve better educational outcomes.

9.15 There is much to do, however, before there is consistent monitoring and evaluation, as currently there is no direct link between the various reports (such as surveys and annual reports) and student outcomes. Also, there is limited or no reference to specific outcomes other than employability. This is primarily because measures and processes do not exist to allow easy measurement and reporting of these outcomes, and if they did, they are not enforced as a reporting requirement.

9.16 The framework for improving performance in any situation requires consideration of the following:

- An understanding of the objectives / goals / outcomes trying to be achieved.
(what are you trying to achieve?)
- A understanding of the key measures / metrics that will allow an assessment to be made as to whether the objectives / goals / outcomes are being achieved.
(how will you measure success?)
- A process / system for gathering data or information in a timely and efficient manner, without imposing too heavy a cost burden.
(data / information gathering)
- A reporting regime that requires the key measures / metrics to be reported on, and ultimately imposes some accountability.
(reporting against objectives to determine achievement of success)

9.17 When these factors are in place, performance can be determined and benchmarked. Then, action can be taken to improve performance where necessary. This means action can be consistent for both wider institutional performance and/or student performance as a component of institutional performance.

9.18 The next section summarises the international literature about tertiary education performance measures.

10 International Literature Review

Findings

10.1 A search of international literature, undertaken in 2003, found seven countries with a reporting system in place that is focused on student performance measures and specific indicators of whether student outcomes were achieved. These countries are: Canada, Netherlands, Denmark, Australia, the United States of America ("USA"), the United Kingdom ("UK") and Finland.

10.2 Of these seven, the five countries that have a portion of their overall funding linked to various indicators are Canada, Netherlands, Denmark, Finland and the USA.

10.3 Across the seven countries, over 45 different performance indicators are used. A summary of these indicators are listed below and are grouped by the following types of indicators:

- output indicators;
- outcome indicators;
- process indicators.

10.4 "Outputs" are defined as the services and products provided through tertiary education, while "outcomes" relate to the change in lifestyle achieved through consumption of education outputs. "Process" indicators relate to the performance of the institution as a whole, and factors surrounding efficient running of the institution. The international search showed that student performance indicators linked to funding are more commonly "output" indicators rather than "outcome" indicators.

10.5 The proportion of tertiary education funding which has been linked in practice to student performance is minimal (between 2% and 5.5%). One exception was South Carolina in the USA where 100% of the funding is based on 37 performance indicators.

10.6 Our investigation included jurisdictions that have considered performance based funding, and have either not implemented it, or have moved away from it following implementation.

10.7 Examples of states in the USA discontinuing performance based funding include: California (2002) and Arkansas (1997). States who have not implemented this type of funding, following consideration of it, include Texas and Virginia. The impression is that the practice in the USA is generally to cease using student performance measures as a basis of funding tertiary education.

10.8 Based on our literature search, it appears that government authorities tend to use educational indicators that measure institutional efficiency, student satisfaction, job placement and value for resources. In contrast, institution administrators tend to use measures that reflect the quality of the educational experience in a manner that illustrates their own specific institutional missions (King Alexander, 2000).

Performance Measures

10.9 A consolidated list of the performance measures currently used, or having been considered in the jurisdictions studied, is presented below.

Table 16: Outcome Measures

<ul style="list-style-type: none"> • Number of students finding work after training • Number of students who move between occupational groups before and after training • Number of students who fully or partly achieve main reason for undertaking study • Rating quality of training highly • Salary after graduation • Relative success of graduates in labour market • Number of graduates working in jobs related to training • Employer satisfaction with student's work • Number of graduates who prepare for professional programmes 	<ul style="list-style-type: none"> • Alumni satisfaction • Student satisfaction • Number of students who fail but subsequently pass remediation • Improvement actions based on assessment findings • Do graduates possess qualities employers are seeking <ul style="list-style-type: none"> – Analytical skills – Motivation & ability to continue learning – Problem solving – Information management – Team work ability – Flexibility – Critical thinking – Communication skills
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Table 17: Output Measures

<ul style="list-style-type: none"> • Number of graduates • Retention rates • Credits on graduation • Time to degree • Transfer rates of students • Number of courses completed • Number of graduates in critical skills fields • Workforce development and training 	<ul style="list-style-type: none"> • Accessibility • Affordability • Number of programs accredited • National tests for comparison • Faculty productivity • Number of minority students • Number of minority graduates
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Table 18: Process Measures

<ul style="list-style-type: none">• Effective compliance reporting• Acceptable financial indicators• Success in generating additional funding from contract activities• Faculty workload• Use of technology and distance learning• Mission specific goals• Peer review• Sharing expertise within and outside institution	<ul style="list-style-type: none">• Percentage of management standards met• Classroom utilization• Academic and other credentials of professors and instructors• Expenditure to achieve institutions mission• Average salary• Class size and student teacher ratios• Use of best management practices• Adoption of strategic plan and attainment of those goals
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10.10 Although there are a large number of outcome measures that have been applied in the international literature, they mainly focus on graduates and tend to be university, rather than community college or polytechnic based. The output and process measures are related to success at achieving an increase in outputs, rather than understanding the added value to the students.

Analysis

10.11 As discussed above, our search of the international literature found seven countries reporting on higher tertiary education performance outcomes and five countries linking performance to institutional funding. There is, however, no funding formula that would be easily applicable or transferable to the New Zealand tertiary education sector. This is because of the data requirements of the operational funding formulas.

10.12 Those jurisdictions that do link funding to performance generally only link a small proportion, typically in the range of 2% - 5%. Across the board, experience with linking funding to performance has shown that a lot of effort is expended for very little return on the time and focus involved. There is limited evidence that student performance improves as a result.

10.13 The performance measures collected cover a range of “outcomes”, “outputs” and “processes”. The measures linked to funding are most commonly output and process measures. We found only limited examples of experience where performance measures based on student outcomes had been used as a basis for funding.

10.14 Each country investigated cited numerous issues regarding implementation and ongoing utilisation of performance based funding systems. These include:

- complexity;
- stability of funding to allow effective forward planning;
- data availability and measurability;
- agreement on what to measure;
- data integrity;

- flexibility in measures to consider different types of institutions;
- benchmarks;
- incentives; and
- administrative overhead costs.

10.15 Such issues will be of relevance when considering how such a funding system should be implemented in New Zealand. Reviews of performance funding systems are regularly undertaken within individual jurisdictions. These reviews indicate the high number of areas that need to be monitored within such a system to ensure that it is operationally effective.

Conclusion

10.16 The international literature search established that, based on the experience described to date, linking student outcomes to funding does not conclusively result in improvements in student performance. Further, there do not appear to be performance measures that have already been tested that could easily and readily be adapted in the New Zealand tertiary education environment, and especially for the polytechnics.

10.17 Hence, if New Zealand polytechnics are to be held accountable for student outcomes, it will be necessary to define measures based on a combination of limited international experience and local understanding of what motivates student performance. A starting point could be for student performance measures for polytechnics to be defined in relation to their key student objectives and related outcomes.

11 Cost Benefit Analysis

11.1 As highlighted in the international literature review section, there are a number of common difficulties and issues that have arisen when educational providers have considered and implemented performance based funding systems.

11.2 An important trade-off to be considered is the cost of adopting the new funding formula compared to the expected benefits. The international literature provides little indication of *quantitative* costs and benefits incurred or received as a result of implementing performance-based funding systems. Where the funding formulas have been adopted and then dropped suggests that, in the short-term at least, the benefits did not justify the costs of the implementation and monitoring required by the performance-based funding.

11.3 The quantification of costs and benefits of the New Zealand government's new funding formula will require significant research and modelling. This section provides a high level examination of the *qualitative* costs and benefits of linking the government's tertiary education funding formula to performance.

Costs of Adopting a New Outcomes-Based Funding Formula

11.4 It is becoming increasingly common for organisations to define key performance indicators in relation to their activities. Experience has shown that to implement and maintain performance monitoring, whether it be linked to funding or not, requires substantial time, effort and financial cost.

Planning Costs

11.5 Planning, by the parties involved in designing the system, is likely to be one of the most time consuming aspects of the process. International experience indicates there will be:

- conceptual issues because of the complexity and diversity of the sector;
- possible lack of agreement on the definition of the outcomes (as discussed above, completions and retentions are not currently measured in the same ways) and on the means of assessing the achievement of outcomes;
- decisions to be made in assigning funding weights for indicators supporting outcomes;
- the need to coordinate initial and continuing collaboration among the stakeholders, in the case of tertiary education performance, the government (including NZQA, MOE, TAMU), TEC, TEI leaders and councils;
- complications in practical implementation.

Data Costs

11.6 As well as these planning issues, data needs to be collected and analysed to examine the appropriateness of the recommended benchmarks and then assess on-going achievement against those benchmarks. This can involve considerable time, effort and financial cost. Following implementation, the ongoing collection of data, processing of results and submission of returns also requires significant time and resource.

11.7 It is important that performance results be communicated in a timely fashion to policy makers and the public. This will involve concentrated resources at the collection, processing and reporting stages.

Post Implementation Costs

11.8 Ongoing review is important when implementing a new funding or monitoring regime, as it enables issues to be identified and, where possible, resolved. The review process will again require time and resources. Note that the review relates largely to ensuring that the funding approach works in an operational sense. Further analysis (and time) would be required for it to be managed in a way that directly impacts on student performance.

Opportunity Costs

11.9 All of the above costs become even more significant if, in fact, the student performance being assessed is not the student performance that TEC aims to achieve. These costs are the opportunity costs of time spent collecting and monitoring information on something that does not improve provider performance to enhance student outcomes. This distracts from the time that could be otherwise spent on gaining a better understanding of the educational services that actually do enhance learner outcomes.

Benefits of Adopting a New Outcomes-Based Funding Formula

Student Focus

11.10 Compared with the current system of EFTS funding (input funding), a system that focuses on outcomes is perceived as being better for a number of reasons. One reason is that an outcomes approach (properly designed and implemented) will focus TEO's on the 'right' things. The institutions will be funded based on how well they meet the needs of their key customers, their students. In addition, a focus on outcomes is likely to encourage more active student engagement than a focus on enrolments alone.

Motivation for Improvement

11.11 Increasing funding for institutions that exhibit improved student performance will act as an incentive for institutions to focus on improvements in performance. This, in turn, benefits the students and refines their chance of achieving their desired outcomes.

Accountability

11.12 If polytechnic objectives and desired student outcomes are aligned with government education outcomes, then reporting against these outcomes will provide the government and the public with effective accountability indicators.

Link to funding

11.13 The key link between the costs and benefits of student outcome monitoring and/or funding, is the amount of funding linked to performance.

11.14 If the quantum of funding tied to student outcomes is reduced when outcomes are not achieved, it is important to consider the balance between amounts large enough to motivate improved institutional performance, yet not too large as to threaten budget instability. At the same time, consideration needs to be given to the substantial costs mentioned above that will be incurred by introducing a monitoring regime, and as a

preference indicated by TEC, a funding regime based on student outcomes. There is a high probability that linking only a small amount of funding to student outcomes will result in the costs of implementing such a system outweighing benefits it is designed to achieve. In this respect, the temptation might be to increase the amount of funding linked to student outcomes, which could potentially lead to budget instability.

11.15 One way of addressing this would be to implement a new system linked to student outcomes whereby additional funds, rather than a reallocation of existing funds, are provided when desired outcomes are achieved. Additional funds could help offset the costs of implementing and sustaining the new monitoring system.

11.16 Performance funding works best at the margin. However, it is important that the amount of funding balances the importance of the funding goals against the difficulty of the tasks at hand. Note, that even where additional funds are provided for a new outcomes-based approach, the opportunity costs could still be significant if the focus on monitoring outcomes fails to reflect an understanding of how different educational institutions achieve them.

12 Conclusions

12.1 TANZ supports, in principle, the concept of focusing the activities of TEIs on student performance. Motivating improvements in student performance, however, involves a chain of drivers (both inputs and outputs) that encourage learner engagement. There is a risk that a one-dimensional view of performance measurement would skew outcomes, rather than improve them. This is particularly the case for polytechnics, given that a key objective is employability, which many students successfully achieve before a course is completed.

12.2 TANZ is concerned that the potential benefits of the proposed funding approach (in terms of modified behaviour and performance improvement) will not be achieved, primarily because completion and retention rates are a narrow way of viewing student performance and currently do not make adjustments for the differences between education provider types. Further work is required before the broader outcomes monitored by student surveys can focus on how tertiary education providers can successfully engage to impact on an improvement in outcomes.

Student Objectives and Outcomes

12.3 TANZ facilitated by PwC, undertook an exercise to understand and define key student goals and outcomes. The following four key goals for polytechnics were identified:

Table 19: TANZ Key Goals for Polytechnics

TANZ Key Goals for Polytechnics	
1	Personal growth and development of students
2	Lifetime learning opportunities
3	Ensuring graduates are job-ready, with up-to-date skills
4	Commitment to vocational education

Source: TANZ, 2003/04.

12.4 Aligned with the goals above, TANZ identified four key student outcomes for polytechnic education:

Table 20: TANZ Key Student Outcomes

TANZ Key Student Outcomes	
1	Personal growth over a student's lifetime
2	Getting a job / employability (increasing employment and employability)
3	Extension of skill-set (boosting existing skills, raising foundation skills)
4	Gaining a better qualification and greater financial rewards

Source: TANZ, 2003/04.

12.5 Broadly speaking, these outcomes are consistent with the wider government objectives for tertiary education and with TEC's Tertiary Education Strategy. These objectives and outcomes could be used as a basis for developing a robust, and fair, funding system with a performance-based component.

12.6 Work is, therefore, required to define specific measures that support each of the outcomes, as well as determining a way to collate the required information to support each measure. Then, it will be important to select measures where the benefits of the funding approach outweigh the costs for both the funder and the polytechnic.

Motivating Performance

12.7 As a practicality, performance can only be improved when performance has been defined, measured and reported on.

12.8 The findings in this report indicate that there are outstanding issues in relation to defining performance, measuring performance and reporting on the performance of tertiary education providers. Further, there is a need to distinguish the role of polytechnics from that of universities.

12.9 Only when the outstanding work is completed will polytechnics and funders be able to understand what factors influence performance (i.e. establish an absolute and relative benchmark). Then, it will be possible to describe and define the levers that can be applied to motivate and improve provider performance and learner outcomes.

12.10 There are a number of these levers, but tertiary education management and staff are key to improvements in performance. An ill-informed performance funding regime that takes funds away from polytechnics risks the following adverse outcomes:

- specific access objectives may be compromised;
- internal inputs (teachers) become less motivated/enthusiastic – they will not engage the student in the best manner;
- less funds are available to develop depth and breadth of outputs such as course content;
- lowering of standards to ensure higher completion rates;
- fewer students will want to engage with learning and those who still enrol engage less; and
- leading to less than desirable student performance and outcomes.

Differences between Different Parts of the Sector

12.11 To achieve successful student outcomes, it is important to understand the key differences in students, inputs and outputs between institutions. Most significantly, students at different institutions, such as polytechnics and universities, differ in many ways. These differences should be analysed to ensure that the performance measures selected are appropriate for each institution.

Costs and Benefits

12.12 An analysis of the costs and benefits of the proposed funding arrangement is necessary to ensure that the system achieves its desired affects and that it is an appropriate application of government funding. This analysis also needs to consider the opportunity cost of applying a formula based on retentions and completions where investment in new measures, while focused away from inputs, wastes time, resources and the opportunity to better understand how to engage with students to improve learning.

Recommendations

12.13 TANZ recommends that:

- further work is done on developing educational provider performance measures that are linked to agreed government and education provider objectives for polytechnic students (such as the objectives identified by TANZ);
- outcomes are identified; including student outcomes, that are linked to defined objectives such as the outcomes identified by TANZ;
- work is done to gain a greater understanding of the way engagement between polytechnics and their students leads to improvements in student performance and, from this, develop performance measures that are likely to motivate polytechnic behaviours that lead to the desired outcomes;
- work is done on understanding the difference between tertiary education institutions and, from this, assess the appropriateness of generic performance measures for all institutions; and
- the costs and benefits of the proposed performance funding arrangements are examined to ensure the system achieves its desired results and that it is an appropriate application of government funding.

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Appendix B: Tertiary Education Strategies 2002-2007

Table 21: Thirty Five Outcome Objectives Listed by Strategy

Strategy	Outcome Objectives
<p>1. Strengthen system capability and quality</p>	<ul style="list-style-type: none"> • Improved strategic capacity and leadership at both governance and management levels. • Increased differentiation and specialization. • Greater collaboration with the research sector, the creative sectors, industry, iwi and communities. • Sustainable growth of export education capability centered on a reputation for quality teaching and pastoral care. • A coherent and reliable system of qualifications, learning recognition and credit transfer. • Learners and the wider public have confidence in higher levels of quality throughout the system.
<p>2. Te Rautaki Mātauranga Māori - Contribute to the achievement of Māori development aspirations</p>	<ul style="list-style-type: none"> • Tertiary education leadership that is effectively accountable to Māori communities. • Strong and balanced Māori staff profiles within the tertiary education system. • Quality programmes that recognise Te Ao Māori perspectives and support the revitalisation of Te Reo. • Robust options for kaupapa Māori tertiary education that reflect Māori aspirations. • Increased participation by Māori in both a broader range of disciplines and in programmes that lead to higher-level qualifications. • A tertiary education system that makes an active contribution to regional and national Māori / whānau / hapu / iwi development.
<p>3. Raise foundation skills so that all people can participate in our knowledge society;</p>	<ul style="list-style-type: none"> • Significantly improved adult foundation skill levels, achieved through increased access to foundation education in a range of learning contexts. • Clearer accountability for quality and outcomes within foundation education, including a greater focus on assessment. • A common understanding of the definition of foundation skills and of best practice teaching in the area. • Improved linkages between secondary and tertiary education and improved staircasing within tertiary education.

<p><i>4. Develop the generic and specialist skills New Zealanders need for our knowledge society;</i></p>	<ul style="list-style-type: none"> • Accurate and timely skills forecasting. • Industries are supported in meeting their self-identified skills needs. • Equity of access and opportunity for all learners. • Learners are equipped to make informed choices about career and learning options. • Broader development of skills for active citizenship and the maintenance of New Zealand's cultural identity. • Improved provision of, and better systems of recognition for, high-level generic skills. • Promotion of specialist skills that contribute to New Zealand's development.
<p><i>5. Educate for Pacific People's development and success</i></p>	<ul style="list-style-type: none"> • Pacific Peoples learners are encouraged and assisted to develop skills that are important to the development of both the Pacific and New Zealand. • A tertiary education system that is accountable for improved pacific learning outcomes and is connected to Pacific Peoples economic aspiration. • Pacific Peoples education services are assisted to grow their capability and enhance Pacific people's learning opportunities. • An increased proportion of Pacific Peoples staff at all levels of decision making in the tertiary education system.
<p><i>6. Strengthen research, knowledge creation and uptake for our knowledge society</i></p>	<ul style="list-style-type: none"> • Excellent research performance is encouraged and rewarded. • Stronger accountability and enhanced performance reporting for tertiary education research. • Increased global connectedness and mobility. • A more focused tertiary research investment through world-class clusters and networks. • Greater alignment of tertiary education research with national goals. • Improved knowledge uptake through stronger links with those that apply new knowledge or commercialisation of knowledge products. • Increased breadth of support for research students and emerging researchers, with a particular focus on the development of Māori researchers.