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Retention, Completion and Progression in Tertiary Education in New Zealand

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This paper discusses the results of the first comprehensive longitudinal study of qualification retention, completion and progression in tertiary education in New Zealand. Of the cohort of domestic students which started a qualification at a public tertiary education provider in 1998, 40% had gained a qualification by the end of 2002, 9% were still studying, and 51% had left without gaining a qualification. For the cohort of students who completed a qualification in 2001, 15% continued study at a higher level in 2002, 24% continued at the same or a lower level, while 62% left study. Significant variations exist for different demographic and study-related subgroups.

Introduction

The lack of information on the rates at which students persist in their studies and complete tertiary qualifications has been a recognised gap in New Zealand. While there are well-established national collections of tertiary education enrolments and completions, the lack of a unique student number (until 2003) historically had been a barrier in tracking students longitudinally through their tertiary studies.

New Zealand, like a number of other countries, is facing the challenge of balancing the rising cost to government of a rapidly expanding sector, with managing affordability and access for students while maintaining the quality and viability of its tertiary education organisations. One of the components of New Zealand's recent tertiary education reforms has been a focus on getting better value for its investment, with an explicit focus on recognising and raising the quality of teaching and learning and improving outcomes for students. This is being given effect, for example, through new policies that tie funding to performance, for both teaching and research. (see e.g. NZ Ministry of Education, 2002a, 2002b, 2002c).

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Rates of qualification completion provide one indicator of the value a country is getting for its investment in post-school education and training. It is not the only measure, or even the most important. Better jobs, higher income, increased productivity, improved equity and access, and increased human and social capital are all important indicators. Numerous studies have shown the income and employment benefits of educational qualifications (e.g. Maani, 2002, p. 1, for a discussion of the literature on this; also Statistics New Zealand, 2003). Other studies have also shown non-employment-related benefits of tertiary education (e.g. Johnston, 2004).

Method

Concepts and Definitions

The first part of the study involved a review of existing domestic and international practice in defining and measuring the concepts of retention, attrition and completion in tertiary education. The results of this have been published elsewhere (NZ Ministry of Education, 2004a), and are summarised here.

The review found that, while there was wide common understanding of concepts across countries, there was little consistency in the definitions used. The concepts adopted for the New Zealand study were retention, attrition, completion and progression. The definitions adopted for retention, attrition and completion for this study were most closely aligned with those used in the USA.

Retention is concerned with how long students persist in their studies, and specifically records what percentage of students stay in study until they have successfully completed. The complement of this is attrition or dropout; or how many students leave study without completing. For this study, the following definitions were adopted:

$$\text{retention} \qquad r_i = \frac{(E_i + C_i)}{G} \times 100$$

$$\text{attrition} \qquad a_i = 100 - r_i$$

$$\text{completion} \qquad c_i = \frac{C_i}{G} \times 100$$

$$\text{progression} \qquad p_i = \frac{E_i}{C} \times 100$$

where:

G is the number of students in a given cohort in a given base reference year;
E_i is the number of students that are enrolled i years after the given base reference year;
C is a given cohort of students completing a qualification in a given base reference year;

C_i is the number of students that have successfully completed a qualification i years after the given base reference year;

r_i is the retention rate for cohort G, i years after a given base reference year (expressed as a percentage);

a_i is the attrition rate for cohort G, i years after a given base reference year (expressed as a percentage);

c_i is the completion rate for cohort G, i years after a given base reference year (expressed as a percentage);

and p_i is the progression rate for cohort C, i years after a given base reference year (expressed as a percentage).

All rates are time-based, that is they are always expressed as rates so many years after a given base reference year. For progression, this study focused initially on progression in the year following completion (i.e. $i=1$ in the definition above).

In this initial study, rates were not adjusted for part-time study or breaks in study. This is important in interpreting rates, as rates after a 'normal' period of full-time study for a qualification (e.g. three years for most undergraduate degrees) will under-represent true or final retention and completion rates because some students will have studied part-time or have taken a break. Similarly, a number of students will take a break after completing a qualification, and return to study in future years. For example, a student who takes a break in 2002 and returns to study in 2003 will be treated as having dropped out in 2002 rates, but as having been retained in 2003 rates. As such, completion rates represented in this study will *under-represent* true or final completion rates.

In the same way, retention typically reduces over time, as students progressively drop out. As such, retention rates represented in this study will *over-represent* true or final retention rates.

There are a number of methodological issues associated with projecting final completion rates. Both Australia and Britain have developed methods of doing this, using information from past students, who have subsequently returned to complete their studies (Martin et al., 2001a, 2001b; HEFCE, 2002).

The definition of the cohort is also important in interpreting transfers. For example, if the cohort of interest is students starting a bachelor's degree, then students completing a different qualification will not be counted as completed. If the cohort of interest is students starting at universities, then students will be counted if they complete at that or any other university, but not counted if they complete at a non-university provider. Where the cohort of interest is solely demographically defined (for example, all male students), then all completion will be counted, regardless of whether the qualification or institution where they completed at is the same as where they started.

Scope, Coverage and Sources

Data on student enrolments and qualification completions have been collected at a unit record level in New Zealand since the early 1990s. However, until 2003, no unique and permanent student number existed that could enable these records to be

linked across different tertiary education organisations, or across time. This study can help bridge the gap in information until a time series of reasonable length based on the new national student number can be built up. It will also enable this future longitudinal data to be extended backwards in time to before the introduction of the unique national student number.

The study covered most, but not all, of New Zealand's tertiary education sector. The sector in New Zealand is widely defined and includes study towards formal assessed qualifications in tertiary education organisations (including 35 public providers, and over 800 private providers), through to industry-based training, and non-formal community-based education. Provision can range from ISCED levels 3 to 6 — i.e. upper-secondary level through to doctorate level. The scope of this study included all students enrolled in formally assessed qualifications in publicly funded institutions, including all 35 public institutions and around 250 private institutions.

Matching Methodology

Full details of the methods used to match records from the datasets, and the quality of the matching in this study have been published elsewhere (NZ Ministry of Education, 2004b), and are summarised here.

The matching methodology consisted of three main stages. The matching involved comparing every enrolment record to every other enrolment record and every qualification completion record for the years 1994 to 2002 (some 4,500 billion theoretical comparisons).

The first stage involved exact matching using up to 13 fields on the two enrolment records being compared. Each field comparison was given a score depending on whether there was a match or not, and on predetermined weights for each field. If the sum of these comparisons was greater than 1, then the two records were considered to match. All explicit *and* implicit matches were then linked. For example, in Figure 1, all records A to H are assigned the same student number by logical association, even though not all pairs match. This stage was known as "Join the dots".

The second stage checked for spurious links, using information from other linked pairs from stage 1. In Figure 1, records A–D have matched strongly, that is they have
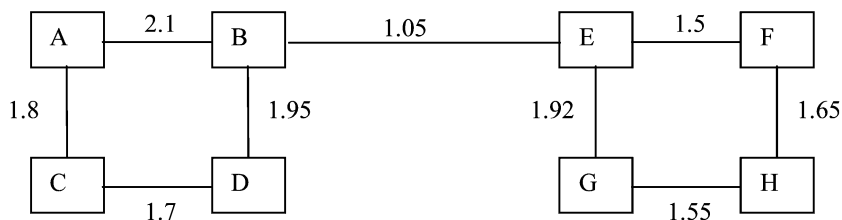

Figure 1. "Join the dots" and the "Weakest link"

scores well over 1. Records B and E have a weak match — i.e. close to 1. Records E–H have strong matches. Records A, C and D do not match with any of the records E–H (i.e. they have scores <1).

Because the two clusters of records A–D and E–H have non-matching pairs, and one single weakest matching pair (B and E), then this pair is considered to be a spurious match (the weakest link), and is broken. Records E–H are then assigned a different student number to records A–D. The stage was known as the "Weakest link".

In the third stage of matching, enrolments were compared with all completion records, and where matched, the relevant student number assigned from stages 1 and 2 was allocated.

The critical component of the matching methodology was the development of *match weights* and the *decision table*. In the absence of unique, error-free identifying information, it is impossible to know for certain whether any two records represent the same student. Even if every field on both records matches, there is a chance, however remote, that they are actually different people. Conversely, even if every field on both records is different, they could, in theory, still represent the same student.

One might expect both of the above cases to happen very rarely. In most cases, some fields will match and some will not match. Whatever matching methods are used, if these methods determine that two records represent the same student, there will still be a chance that they do not. That is, the match could be a mismatch or a false positive. Conversely, if the statistical matching method used determines that two records are not the same student, there is still a chance that they in fact were the same, and a non-match or false negative has occurred.

Traditional statistically based methods (for example, those involving probability distributions and user-input error terms) were trialled and eventually abandoned in favour of the decision table approach finally adopted. This table consisted of around 6,000 (out of a theoretical 1.6 million) combinations of comparing two records. (Each of the 13 fields being compared has three outcomes: same, different or unknown (where one or both is missing), giving rise to 3^{13} combinations when two records are compared.) A model was developed with initial weights assigned to each of the 13 fields, to allow the vast number of more obvious matches and non-matches to be eliminated. Each of the remaining combinations was then assessed independently by a panel of three experts, and a joint human decision reached on whether these combinations represented the same student or not. The weights in the model were then refined iteratively for each field, so that the resulting match score was consistent with the human decision.

Quality of Matching and Reliability of Estimates

In the absence of reliable benchmarks or exemplars upon which to test the matching, it was not possible to determine a quantitative estimate of the quality of the matching

exercise. Previous New Zealand work, for example, indicated that between 52% and 54% of students enrolled in one year would also be enrolled in an adjacent year (NZ Ministry of Education, 2004a). This compares with matches of 51% to 57% for the nine years matched in this study.

As discussed above, the method developed for this study did not use traditional probabilistic methods, and so did not lend itself to production of estimates bound by confidence intervals.

A national student number introduced in 2003 will enable a true independent check to be undertaken. Matching of enrolments using this national student number will be compared with matching using the method developed for this study. Instead, a range of methods was employed to assess and improve the quality of the matching exercise.

Extensive work was focused on improving the quality of enrolment and completions data. This included extensive testing and adjustments for missing and invalid data, and fields whose classifications had changed over the period 1994 to 2002. Routines were developed to check for such things as provider mergers and changes, provider student number changes, date of birth transposition and other known errors in certain fields in certain years.

The development of the decision table, "Join the dots" and the "Weakest link" methodologies provided significant improvements to the quality of matching obtained from previous methods. Further approaches taken to assess and improve quality involved extensive peer review, year-on-year consistency tests, outlier testing, provider case studies and benchmarking against the few *ad hoc* studies previously available in this area.

Findings

For the purposes of this paper, the findings focus mainly on two cohorts. For those domestic students (considered to be New Zealand citizens or permanent residents, or Australian citizens) who started a qualification at a public provider in 1998, we examine their retention and completion status five years later (by the end of 2002). For those domestic students completing a qualification in 2001, we examine progression in the following year. Fuller findings for these cohorts and others have been published elsewhere (NZ Ministry of Education, 2004c).

Total Sector Retention, Completion and Progression

An estimated 40% of domestic students starting a qualification in 1998 had completed after five years; 51% of those who started a qualification in 1998 had left after five years without completing it, and 9% were still studying towards it five years later. A total 15% of domestic students who completed a qualification in 2001 progressed to a higher-level qualification in 2002. Just under 24% continued study in a qualification at the same level or lower in 2002. The remaining nearly 62% left

Table 1. Total sector five-year qualification completion, retention and attrition rates (percentages)

Domestic students at public providers in 1998	By end of 2002 (5 years later) percentage that		
	Successfully completed	Were still studying towards completion	Left without completing
Domestic students starting any qualification	40	9	51
Domestic students starting their first qualification	37	5	57

Note: Numbers may not total to 100% due to rounding.

tertiary study in the following year. This figure does not capture those students who have taken a break in 2002, and who may return to further study in the future.

Completion Rates by Level of Qualification

Despite requiring the shortest time to complete, certificate completion rates are the lowest of any level studied. This may, in part, reflect differing academic abilities of students at different levels. This may also, in part, reflect the fact that proportionately more students at sub-degree level are studying part-time, and have work, family or other commitments. A number of students starting a certificate end up transferring to and completing a diploma or degree.

Progression to higher levels of study is highest for students completing certificates (at 17%). Around 15% of students completing degrees progress to higher-level study, while 13% of students completing a diploma go on to higher-level study. Around 6% of students completing an honours or master's degree go on to doctorate study.

Long-term Doctorate Completion

The length of study required to complete a doctorate in New Zealand is normally considered to be around four years for most full-time students. Around 20% of New

Table 2. Five-year qualification completion, retention and attrition rates by level studied (percentages)

Domestic students starting a qualification at public providers in 1998, by qualification level	By end of 2002 (5 years later) percentage that		
	Successfully completed	Were still studying towards completion	Left without completing
Certificates	30	4	66
Diplomas	32	4	64
Bachelor's degrees	46	7	47
Postgraduate certificates/diplomas	49	1	50
Honours/master's	59	2	39
Doctorates*	26	23	51
All levels	40	9	51

Note: "All levels" includes students who changed qualification level, whereas rates for individual levels do not.
*See text for estimates of longer-term rates of completion at doctorate level.

Table 3. Progression rates, by qualification level

Domestic students completing a qualification in 2001, by qualification level completed	Percentage in 2002 enrolled at a:		
	Higher level	Same level	Lower level
Certificates	17	25	–
Diplomas	13	14	9
Bachelor's degrees	15	11	10
Postgraduate certificates/diplomas	13	7	11
Honours/master's	6	12	19
Doctorates	–	2	11
All levels	15	18	6

Zealand's current 3,800 doctorate students are studying part-time. It is interesting therefore to attempt to estimate what longer-term doctoral completion rates may be.

For each of the cohorts of students who were starting or continuing doctorate study each year, we examine what percentage had gained their doctorate by 2002. That is, the rate of completion in year 1 for all students studying doctorates in 2002, the rate of completion in year 2 for 2001 doctorate students, through to the rate of completion in year 6 for all students studying doctorates in 1997. While this combines rates for different cohorts of students, it does allow an indication of longer-term completion rates to be estimated, as each cohort includes all students, including those who started their doctorate well in the past.

Using this approach, an estimated 56% to 57% of students who were studying at doctorate level in 1996 had completed by the end of 2002. This is higher than the 49% of 1998 doctorate starters who had completed or were still studying in 2002, indicated in Table 3. This difference is likely to be explained by the higher number of doctorate students who take time out during their studies.

When analysed for men and women separately, rates of doctoral completion are much closer than portrayed by actual five-year completion rates, where completion rates for men are higher. In fact, for students studying a doctorate in 1997, 55% of women had completed by end of 2002, compared to 54% of men. This may indicate that while completion rates are similar, women take longer to complete, either due to more time out or more part-time study. Although the calculation methods used are different, these rates are similar to the 53% completion rate after seven years for postgraduate research doctoral students in Australia (Martin et al., 2001a, 2001b).

Adjusting Retention for Part-time Study and Breaks

Around half of students in New Zealand are studying part-time. While the retention rates presented so far, provide an actual or *de facto* picture of student retention and completion, it is interesting to examine the question of what would these rates look like if all the students were studying full-time and without a break in study. This is displayed in Table 4.
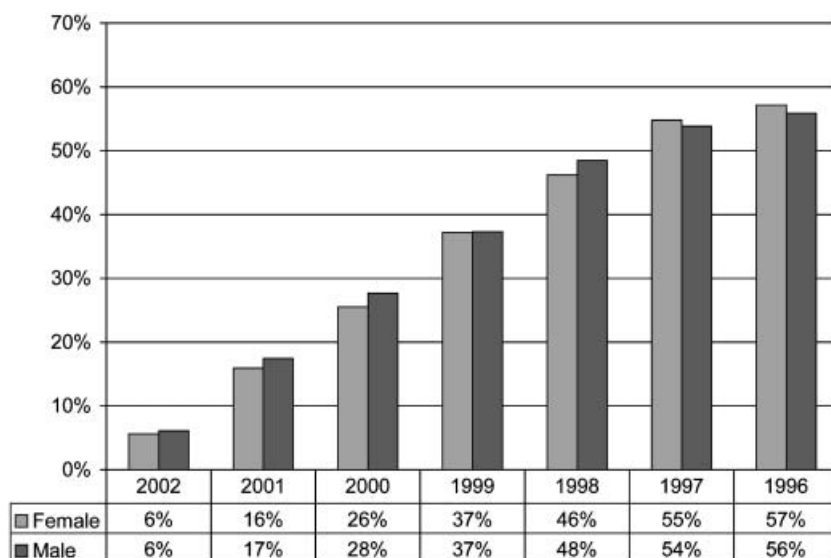
Figure 2. Percentage of all domestic students studying doctorates in a year who have successfully completed by the end of 2002, by gender

After adjusting for breaks in study, 44% of domestic students at public provider institutions in 1998 were enrolled in more than one year at certificate level. But when this was further adjusted for those studying part-time, just 9% were enrolled in more than one year at certificate level. That is, if these same students were studying full-time without a break, only 9% would have been enrolled in more than one year.

By contrast, 33% of domestic students starting a degree in 1998 were enrolled more than three years. If they were enrolled full-time continuously (i.e. without breaks), 13% would have enrolled in more than three years. The average length of

Table 4. Duration of study adjusted for part-time study and breaks

Qualification level	Total years enrolled between 1998 and 2002*	Percentage of all domestic students who started at this level in 1998	Total continuous equivalent full-time years enrolled between 1998 and 2002	Percentage of all domestic students who started at this level in 1998
Certificates	>1	44	>1	9
Diplomas	>2	22	>2	5
Bachelor's degrees	>3	33	>3	13
Postgraduate cert/dips	>2	17	>2	0
Honours/master's	>2	27	>2	13
Doctorates	>4	43	>4	17
Average all students	2 years 0 months		1 year 1 month	

Note: Number of years enrolled, regardless of how long during the year the student was enrolled for.

Table 5. Five-year qualification completion rates, by level studied and gender

Domestic students starting a qualification in 1998 at public providers	Percentage of students successfully completed by the end of 2002, by qualification level						
	Certificates	Diplomas	Degrees	Postgrad cert/dips	Honours/ master's	Doctorates	All levels
Females	35	34	49	51	59	23	44
Males	26	28	41	47	58	29	35
All Students	30	32	46	49	59	26	40

Note: "All levels" includes students who changed qualification level, whereas rates for individual levels do not.

time students spent in study between 1998 and 2002, if they all were studying full-time without a break, was 1 year and 1 month.

Gender, Ethnicity and Age

Women are more likely to complete a tertiary qualification successfully than men. For degree-level qualifications and below, the rate at which men complete is 6% to 9% lower than the rate for women. However, the gap narrows at postgraduate level. For example, while five-year completion rates for doctorates are higher for men than women, estimated final completion rates are about the same (estimated 57% for women compared with 56% for men).

Students of Asian ethnicity have the highest completion rates over all levels (52% compared with 40% for all students). Domestic Asian students comprised 16 percent of all domestic students in New Zealand in 2002. Mäori completion rates are among the highest of any group at levels below degree, but remain low at degree level and above. Pasifika (i.e. the broad group of ethnic groups of peoples whose ancestry is from Pacific Island nations) rates of completion are the lowest of any group. Mäori participation has grown significantly since 2000, and the percentage of the Mäori

Table 6. Five-year qualification completion rates, by level studied and ethnic group

Domestic students starting a qualification in 1998 at public providers	Percentage of Students Successfully Completed by end of 2002 by Qualification Level						
	Certificates	Diplomas	Degrees	Postgrad cert/dips	Honours/ master's	Doctorates	All levels
Mäori	36	35	39	42	50	16	45
Pasifika	29	26	33	44	53	–	31
Asian	38	35	55	49	66	33	52
European/Päkehä*	29	32	47	50	58	26	39
All students	30	32	46	49	59	26	40

Note: Rates based on fewer than 30 students are excluded.
*Päkehä is the Mäori term used to describe the ethnic group of the majority of the New Zealand population of predominately European ancestry.
"All levels" includes students who changed qualification level, whereas rates for individual levels do not.

Table 7. Five-year qualification completion rates, by level studied and age group

Domestic students starting a qualification in 1998 at public providers, by age group	Percentage of students successfully completed by the end of 2002, by qualification level						
	Certificates	Diplomas	Degrees	Postgrad cert/dips	Honours/ master's	Doctorates	All levels
15–17	39	29	59	–	–	–	44
18–24	35	35	52	51	62	34	47
25–9	28	30	37	48	58	26	35
40 and over	25	31	36	50	49	18	32
All students	30	32	46	49	59	26	40

Note: "All levels" includes students who changed qualification level, whereas rates for individual levels do not.

population who undertake tertiary study is now higher than any other group (NZ Ministry of Education, 2003). However, much of this growth is in levels below degree level, and both participation and completion at higher levels remain low for Mäori and Pasifika groups. Mäori students comprised 20% of all domestic students in 2002, while Pasifika students made up around 6% of domestic students.

Students under 25 have higher completion rates across all levels, especially at degree level, where students under 25 are nearly 1.5 times as likely to complete as students over 25. This is due, in part, to the fact that older students are more likely to be studying part-time and combining study with work or family commitments. Probably for the same reason, the difference is less for diploma qualifications, both undergraduate and postgraduate, where students under 25 are only slightly more likely (1.1 times) to complete than students of older ages.

Discussion

This is the first time such a study has been undertaken in New Zealand. Therefore there is an absence of domestic comparators against which to assess these results. Comparisons with other countries can provide additional benchmarks. Fair international comparisons are problematic, however, because of the significant differences between education systems, including access to financial support, different academic entry requirements, and qualification content. Differences in data measurement and definitions also hinder direct comparisons.

The OECD provides the only source of standardised international comparisons (OECD, 2003). However, in order to achieve this comparability across countries, the OECD is obliged to use indicators that are not the best measures of completion and retention that are possible. The definitions used in this study, and those definitions used in the countries looked at in this study, each differ from each other and from those used in the OECD comparison. Further investigation is needed to explore the development of New Zealand rates that can be fairly compared with rates as defined and published in other countries.

The finding that over half of all domestic students starting a qualification in 1998 had left without completing a qualification by 2002 is of interest. In interpreting this figure, there are a number of factors that should be considered.

New Zealand's lifelong approach to tertiary learning and its relatively open access to enrolment and student loans have acted to increase participation in tertiary education and, in particular, to groups not traditionally involved in formal post-school study. The sector has expanded 70% since 1994, with annual growth of around 10% since 2000. Another feature of New Zealand tertiary education is the number of students studying part-time, the growing number of distance education students, and those trying to combine work with study.

Understanding the nature of the sector is important in interpreting and comparing completion rates against rates elsewhere in the sector, or in other countries, where access and academic entry requirements may be more controlled, and where there may be more full-time study, and lower access to student support. A study in Britain showed that the institutions with the highest dropout rates were also the ones that generally excelled at attracting students from under-represented groups (*Times Higher Education Supplement*,12.12.03). That is, completion goals cannot be viewed in isolation from access goals.

In the wider context, students successfully complete courses (variously called units, papers, subjects or modules) at a much higher rate than qualifications (i.e. consisting of one or more courses, and often extending over several years) and many leave study (in particular, in times of higher employment) with only one or two courses left to complete for their qualification. Other students will enrol for a qualification but abandon it once they have met their objectives, which may be passing only two or three courses. To that extent, if a high proportion of students do not complete their qualifications, this cannot necessarily be read as system wastage.

Currently, over half of all students in tertiary study in New Zealand are studying at a level below degree, that is for certificates or diplomas or in courses not leading to a qualification. The finding that completion rates at this level (at around a third) are much lower than at graduate or postgraduate levels raises some interesting policy (and future research) questions:

- are low rates of completion necessarily a bad thing? And from whose point of view? Government, providers or learners?
- why do students leave without completing? And where are people going who do not complete? Into employment? Back into unemployment? (New Zealand does not currently collect sector-wide information on student destinations after study.)
- to what level should successful completion influence funding? And should it differ for different types of students, providers or types of provision?
- how many of the students recently attracted to certificate-level study for the first time will move on and complete higher-level study? Or have improved employment outcomes?

- how much of a student's tertiary education should a government subsidise? For example, should a government fund students who recycle through certificate-level study, especially where courses are provided free to the student?

The findings provide new evidence on relativities between different learner groups. An example is the way in which completion rates vary between men and women for different levels of qualification. The findings quantify the success of Asian students, both domestic and international, across all levels of study, and provide evidence of continued disparities at higher study levels for Māori and Pasifika students.

It is important to note that the rates presented in this study have not been adjusted for part-time study or for students who have taken a break from study. This aspect has been identified for future work. When *duration* of study is adjusted for breaks and part-time study, there are significant differences. If all students studying for degrees studied full-time without a break, 13% would be enrolled for more than three years, compared with 33% currently. Similarly, if all certificate-level students studied full-time without a break, just 9% would be enrolled for more than one year, compared with 44% currently.

Government policies, as well as provider initiatives, have both acted to expand the tertiary education sector significantly in certain areas in recent years, in particular, at lower qualification levels, for people outside the traditional tertiary study ages 18–24, and for those groups with little previous experience of post-school study. The government's demand-driven funding regime, which has allowed for higher levels of access to tertiary education, has led some to criticise current settings. The critics argue that open access has diverted potential resources away from more academically based study (e.g. at degree level and above, where completion rates are typically much higher) into areas considered by some to be of "less academic value" and where completion rates are lower.

In order to manage the costs associated with a demand-driven scheme in times of rapid growth, the government has recently placed restrictions on how much growth will be funded each year. In addition, as mentioned earlier, the government as part of its recent funding reforms has focused on recognising and raising quality of teaching and learning and improving outcomes for students. This has been given effect in new policies that will tie funding to performance.

Completion rates are likely to form one measure of this performance. These changes, along with the fact that sector-wide information on completion rates has only very recently become available, have acted to focus provider attention on retention and on completion.

Conclusion

The first comprehensive study of retention, completion and progression in tertiary education was undertaken between November 2002 and March 2004. The study involved conceptual and definitional components, as well as a significant statistical and technical data-matching component.

The findings show that 40% of domestic students who started a qualification in 1998 had completed it by 2002, while 9% were still studying, and 51% had left without completing the qualification. Of those students successfully completing a qualification in 2001, 15% went on to higher study in 2002, 24% continued studying the same or lower level, and 62% left tertiary study.

Rates of completion were higher, the higher the level studied. Around a third of students starting a qualification below degree level had successfully completed it five years later, whereas 46% had completed their degree, and between 55% and 60% had completed their postgraduate qualification.

Women had completed their qualifications at a higher rate than men — but the gap reduced, the higher the level studied. At doctorate level, estimated long-term completion rates of men and women were similar. Asian students had the highest completion rates across all levels, while Pasifika students had the lowest. Mäori rates of completion were amongst the highest below degree level, but remained low at degree level and above. Students under 25 had higher completion rates across all levels, in particular, at degree level, where students under 25 were nearly 1.5 times as likely to complete as students over 25.

In recent years, the sector has expanded dramatically, in particular, in lower-level qualifications from groups of the population not traditionally well represented in tertiary education. This growth has increased pressures on government funding, and raised questions about whether current government investment in tertiary education is providing good value for money. The recent reforms, along with demand-side initiatives and other market forces, are interacting to shape a rapidly diversifying and changing sector. Information on outcomes will increasingly become part of this interplay, providing challenges to researchers, policy-makers, providers and students alike. It is an interesting time.

Note

For more information on this study visit: http://www.minedu.govt.nz/goto/ tertiaryanalysis

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