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Chapter 5: An overview of learners in tertiary education

In 2007, there were 579,000 students enrolled in all types of formal tertiary qualifications at providers. Forty thousand of these were international students and 76,700 were students in short courses of less than one week. In addition, 186,000 learners were engaged in industry-based training, including 10,800 modern apprentices. There were also 8,240 school students in Gateway programmes, which are designed to give school students workplace experience. Non-formal education such as adult and community education attracted an estimated 249,000 enrolments. It is estimated that approximately 13 percent of the population aged 15 years or over participated in some form of tertiary learning with a tertiary education provider during 2007 and a further 6 percent were undertaking formal learning in the workplace.

Following many years of strong growth, the number of students formally enrolled at tertiary education institutions fell by 1.4 percent from 2006 to 2007. From 2005 to 2006, the number of formal students also fell by 2.5 percent. The overall fall in enrolments in 2007 was driven by fewer domestic students in level 1 to 3 certificates and fewer international students at bachelors level and in level 5 to 7 diplomas. The number of domestic students at level 4 and above actually increased from 2006 to 2007.

Also, when converting the number of people in formal study to equivalent full-time students, study by domestic students at providers increased in 2007. The amount of study undertaken by domestic students increased in 2007 at every qualification level, except in lower-level certificates, while study at qualification level 4 remained stable. The amount of study at bachelors level increased in 2007 due to the 'baby blip' generation continuing to move from school into tertiary education. Study for bachelors degrees with honours, postgraduate certificates and postgraduate diplomas increased dramatically for domestic as well as international students. Doctoral study rose strongly from 2006 to 2007 with international enrolments being the main driver of this increase. Doctoral studies by international students have been funded on the same basis as for domestic students since 2006.

International enrolments fell for the third consecutive year in 2007. Study by international students decreased at bachelors level, in level 5 to 7 diplomas and in lower-level certificates. Partially offsetting this decline were increases in the study of level 4 certificates, bachelors degrees with honours, postgraduate certificates and postgraduate diplomas and doctoral study. In terms of equivalent full-time students, international formal provider-based students represented 11 percent of all enrolments in 2007 compared to 12 percent in 2006.

The reviews of the relevance and quality of provision held in recent years contributed to the further declines in 2007 of level 1 to 3 certificate enrolments. On the other hand, learners in workplace-based study increased by 5.5 percent from 2006 to 2007 and by 8.1 percent from 2005 to 2006. This continued growth in industry training led to the proportion of the population aged 15 years and over in industry training increasing in recent years.

Non-formal learning continued the trend of reduced numbers that started in 2005, reflecting the government's more targeted approach to the funding of this type of education.

An article covering some of the findings from the 2007 survey of international students is included later in this chapter. A second article in the chapter provides a summary of the main findings of the Adult Literacy and Life Skills Survey conducted between May 2006 and March 2007. A third article discusses two analyses of the transitions made by students from school to tertiary study. The two studies discussed in the article used the 2004 NCEA results and answer questions such as 'how does a student's performance at school affect their decision to enter tertiary study?' and 'how does achievement at school affect students' performance in tertiary study in their first year?'

2008 year

Greater predictability in the patterns of participation in tertiary education is likely in the immediate future as investment in tertiary education organisations will be on the basis of three-year plans for all tertiary education institutions and industry training organisations and for some private training establishments from 2008 onwards. The new system will be focused on a differentiated but complementary network of provision.

The government has signalled a continued commitment to growing participation in workplace-based learning and early indications suggest that the number of learners in industry will continue to grow during 2008 at a similar rate to previous years.

Student numbers in bachelors-level and higher study may decrease slightly in 2008, mainly driven by a decrease in the number of enrolments at bachelors level. The April 2008 tertiary education enrolment statistics showed the number of under-18-year-olds decreasing and this suggests that the 'birth blip' of those born around 1990 may have peaked in 2007. Bachelors enrolments by international students are also likely to fall in 2008 as students complete their studies and return home. In contrast, increases in the Performance-Based Research Fund and the 2006 policy change to treat international doctoral students as domestic are likely to exert a positive influence on doctoral enrolments.

Overall, provider-based study at non-degree level is likely to remain stable or strengthen slightly. The focus on level 4 certificates and higher in the 2008-10 Statement of Tertiary Education Priorities is likely to further reduce enrolments in level 1 to 3 certificates. On the other hand, the School Plus initiative aims to ensure that all under-18-year-olds undertake some type of formal education and training, and this is likely to increase the demand for both provider-based and workplace-based non-degree tertiary study in the future.

In 2008, the government also released the Literacy, Language and Numeracy Action Plan 2008-2010, which will increase the number of adults in tertiary education. The plan aims to raise the literacy and numeracy skills of people in the workforce and those near work, such as students in tertiary study and people who will soon be entering or returning to the workforce.

Another factor that may strengthen the demand for non-degree tertiary education in 2008 is the slowdown of the New Zealand economy, as this is likely to weaken the labour market. This, in turn, may lift the participation in the tertiary education sector as more young people and the unemployed seek qualifications to strengthen their position in the labour market.

TRENDS IN FORMAL EDUCATION^{1,2}

After rising rapidly for many years, the total number of formally enrolled students fell in 2006 and 2007. Enrolments fell by 1.4 percent in 2007 and by 2.5 percent in 2006.

In 2007, enrolments in bachelors and higher-level qualifications remained stable while at non-degree level the number of enrolments decreased by 2.3 percent. The upward trend in workplace-based enrolments continued in 2007.

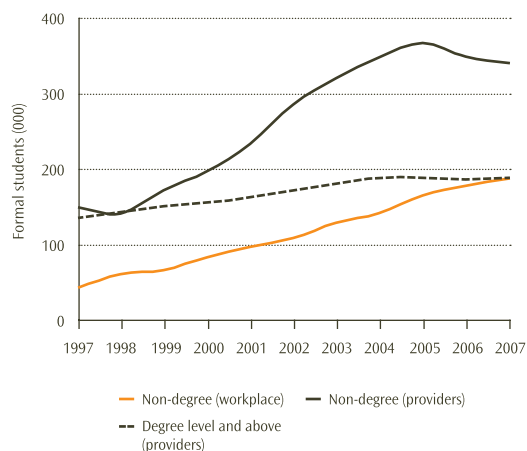
Number of formal students by level of study and setting in 2007:

Non-degree (provider-based)	339,000	(down 2.3% on 2006)
Non-degree (workplace-based)	186,000	(up 5.5% on 2006)
Degree level and above (provider-based)	186,000	(up 1.0% on 2006)

Note: See Table 5.1 at the end of the highlights for fuller information on the size of the tertiary education sector.

Source: Ministry of Education and Tertiary Education Commission.

Figure 5.1: Trends in formal students by level of study and setting



STUDENT ENROLMENTS IN 2007

There were 773,000 formally enrolled students in 2007:

Provider-based (more than 1 week's duration)

Level 1 to 10	460,000	(down 1.1% on 2006)
Training Opportunities	16,500	(down 2.9% on 2006)
Youth Training	10,500	(down 7.8% on 2006)
Skill Enhancement	516	(down 7.5% on 2006)
Non-government-funded students (estimate)	15,000	
Total	503,000	

Workplace-based (more than 1 week's duration)

Industry trainees (incl. Modern Apprenticeships)	186,000	(up 5.5% on 2006)
Modern Apprenticeships	10,800	(up 15% on 2006)
Gateway	8,240	(up 23% on 2006)
Total	194,000	

Courses of less than 1 week's duration

Secondary-Tertiary Alignment Resource	16,500	(down 3.9% on 2006)
Other short courses	60,200	(down 8.1% on 2006)
Total	76,700	

NON-FORMAL STUDENTS

The continued decline in adult and community education reflects a more targeted approach to the funding of this type of education.

The estimated number of students in non-formal tertiary study in 2007:

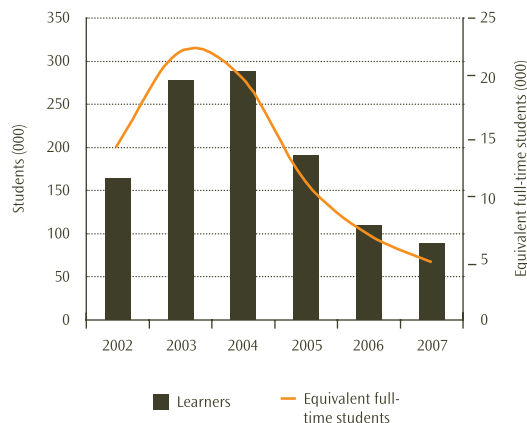
Adult and community education:

Tertiary education institutions	88,700	(down 19% from 2006)
Schools	162,000	(up 8.8% on 2006)
Community organisations	Unknown	

Adult literacy and English for Speakers of Other Languages:

Estimated funded learners	12,000
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Figure 5.2: Non-formal students in tertiary education institutions



1. In these highlights, students are counted in each type of programme and qualification level for which they are enrolled so the sum of the components will not add to the totals.

2. These highlights refer to students enrolled at any time during the year with a tertiary education provider in formal qualifications of more than one week's duration unless otherwise stated.

PROVIDER-BASED ENROLMENTS BY LEVEL OF STUDY

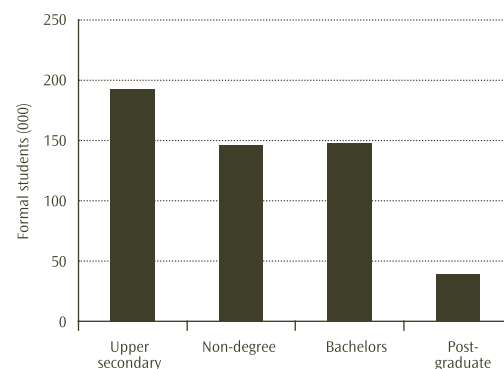
Enrolments at levels 1 to 3 decreased in 2007 and 2006. Before this, lower-level certificate enrolments had increased strongly. Reviews of the relevance and quality of some qualifications led to this decrease. Bachelors and level 5 to 7 diploma enrolments decreased due to fewer international students, while domestic enrolments at these levels rose. Postgraduate study by domestic and international students increased in 2007.

The number of provider-based formal enrolments in 2007:

	Domestic		International	
	2007	% change from 2006	2007	% change from 2006
All study levels	444,000	-1.0	40,000	-6.3
Certificates 1-3	188,000	-8.0	4,820	-11.9
Certificates 4	69,500	12.9	4,050	49.0
Diplomas 5-7	63,100	2.0	9,360	-12.8
Bachelors	128,000	1.5	19,100	-13.6
Postgraduate	32,900	7.5	5,040	16.2

Note: Provider-based students studying certificates 1-3 are included in the upper secondary category.

Figure 5.3: Provider-based formal enrolments by level of study



WORKPLACE-BASED ENROLMENTS BY LEVEL OF STUDY

From 2006 to 2007, workplace-based study increased at levels 1 to 3, while at levels 4 to 6 the number of learners remained stable.

The number of industry trainees (includes Modern Apprenticeships) in 2007 by level of study:

All study levels	186,000	(up 5.5% on 2006)
Levels 1-3	149,000	(up 5.9% on 2006)
Level 4	73,900	(down 1.1% from 2006)
Levels 5-6	5,643	(down 0.5% from 2006)

Source: Tertiary Education Commission.

Figure 5.4: Industry trainees by level of study



EQUIVALENT FULL-TIME STUDENTS

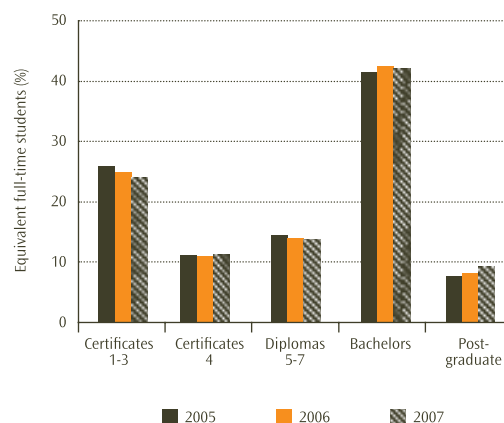
Converting the enrolments to equivalent full-time students showed that tertiary study remained stable overall in 2007. Fewer people studied level 1 to 3 certificates in 2006 and 2007, while more people studied level 4 certificates and at postgraduate level. Study at bachelors level and level 5 to 7 diplomas decreased from 2006 to 2007.

The number of students in formal tertiary education in 2007 by study level (expressed in equivalent full-time student units):

	Domestic		International		% of 2007 enrolments
	2007	% change from 2006	2007	% change from 2006	
All study levels	241,000	1.2	28,800	-11.3	10.7
Certificates 1-3	62,400	-3.4	2,240	-11.3	0.8
Certificates 4	28,200	0.6	1,970	42.0	0.7
Diplomas 5-7	31,000	2.2	5,790	-18.4	2.1
Bachelors	98,500	2.3	14,800	-18.9	5.5
Honours*	10,100	20.9	1,360	35.1	0.5
Masters	6,170	2.2	1,200	3.1	0.4
Doctorates	4,460	2.6	1,410	38.0	0.5

*This category includes postgraduate certificates and diplomas.

Figure 5.5: Distribution of equivalent full-time students by level of study



FORMAL STUDENTS BY PROVIDER TYPE

The 1.4 percent fall in the number of formal students in provider-based tertiary education in 2007 occurred mainly in wānanga and private training establishments. At universities, international bachelors enrolments were lower but these were offset by increases in study by domestic students at bachelors level and also increased domestic and international enrolments at postgraduate level. Student numbers rose at polytechnics mainly because there were more people studying level 4 certificates.

Students by selected provider type in 2007 (expressed in equivalent full-time student units)

All formal enrolments	270,000	(down 0.3% on 2006)
Tertiary education institutions	228,000	(no change on 2006)
Private training establishments	41,400	(down 1.4% on 2006)
Universities	129,000	(no change on 2006)
Polytechnics	77,200	(up 1.5% on 2006)
Wānanga	22,300	(down 5.9% on 2006)

Note: Data for the colleges of education has been merged with the universities.

Fig 5.6: Equivalent full-time students by selected provider type



PARTICIPATION RATES BY ETHNIC GROUP

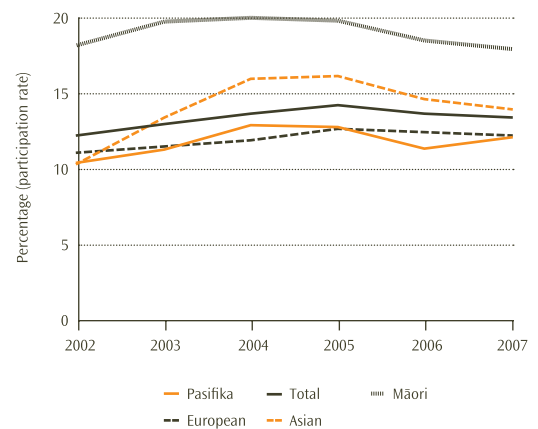
The participation rate of Māori and Asians in formal tertiary education decreased in recent years, while for Europeans the participation rate remained static. The participation rate in tertiary study by Pasifika peoples increased in 2007 following a decrease in 2006. The decreases in certificate-level courses and a relatively low unemployment rate were contributing factors to this lower level of participation.

The percentage of New Zealanders aged 15 years and over in formal tertiary study by ethnic group in 2007:

	Industry training %	Provider-based			All levels %
		Non-degree %	Degree or higher %		
European	4.4	8.3	4.7		12.1
Māori	8.0	16.1	3.7		17.9
Pasifika	6.3	9.5	3.5		12.0
Asian	na	8.3	7.0		13.9
Total	5.6	9.6	4.9		13.3

Note: The provider-based participation rates in the above table have been age-standardised, and students are counted in each ethnic group they affiliated with. In the workplace-based rates a learner is allocated only one ethnic group based on the 'prioritised' method.

Figure 5.7: Age-standardised participation rates in provider-based tertiary education by ethnic group



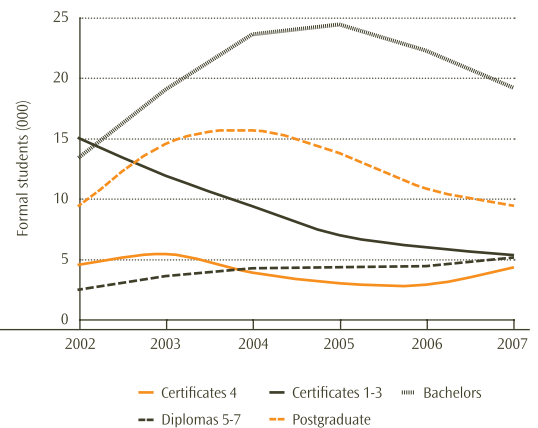
INTERNATIONAL STUDENTS

The number of international students in tertiary study shows a decreasing trend since 2004. In 2007, international enrolments fell by 6.3 percent to 40,000.

- 8.3% of tertiary education students were from overseas.
- 66% of the international students were from Asia.
- 40% more international students enrolled in doctoral studies.

Since 2006, doctoral study by international students has been funded on the same basis as domestic doctoral studies, and this has substantially lowered these fees for international students.

Figure 5.8: International students by level of study



COMPLETING A QUALIFICATION

Qualifications completed by domestic formal students enrolled in tertiary education institutions fell overall in 2006. This downward movement resulted from falls in the completions of non-degree certificates. Completions of diplomas, bachelors degrees and postgraduate qualifications all rose.

Formal students in tertiary education institutions who completed a qualification:

	Domestic			International		
	2005	2006	% change	2005	2006	% change
Total	120,000	110,000	-7.8%	13,400	13,600	1.2%
Certificates 1-3	60,400	50,100	-17.1%	2,200	2,240	1.8%
Certificates 4	17,000	15,400	-9.7%	1,140	965	-15.6%
Diplomas 5-7	12,800	13,800	7.9%	3,840	3,560	-7.2%
Bachelors	23,400	24,600	5.0%	4,630	5,320	15.0%
Honours/postgraduate*	6,160	6,580	6.9%	798	748	-6.3%
Masters	3,220	3,240	0.3%	960	869	-9.5%
Doctorates	578	570	-1.4%	71	71	0.0%

Note: Due to a change in the Ministry's data collection the completion rates to 2007 are not yet available.

WORKPLACE-BASED ACHIEVEMENT

In 2007, the number of national certificates awarded decreased by 16 percent to 29,400. However, the increase from 2005 to 2006 was particularly strong – up by 47 percent to 35,100 national certificates. Before this, the number of national certificates completed by industry trainees had been rising steadily.

The number of national certificates completed by level of study:

All levels of study	29,400	(down 16% on 2006)
Levels 1-2	10,600	(down 9.2% on 2006)
Level 3	6,120	(down 31% on 2006)
Level 4	12,100	(down 11% on 2006)
Levels 5-6	10,600	(down 34% on 2006)

The proportion of Gateway students going on to further study or employment in 2007:

To education	63%	(69% in 2002)
To employment	34%	(29% in 2002)

Source: Tertiary Education Commission.

MORE STUDENTS RETAINED IN STUDY

The five-year retention rates improved at the non-degree level for domestic students who started study in 2002, compared with those who started study in 1997. Over the same period, the five-year retention rates at bachelors, masters and doctoral level remained virtually unchanged.

The five-year retention rates for domestic formal students who started study in 1997 and 2002:

	1997	2002
All levels of study	49%	54%
Certificates 1-3	34%	41%
Certificates 4	23%	44%
Diplomas 5-7	30%	39%
Bachelors	59%	59%
Honours/postgraduate*	60%	65%
Masters	60%	61%
Doctorates	70%	71%

Note: Due to a change in the Ministry's data collection the five-year retention rates to 2007 are not yet available.

Figure 5.9: Qualifications completed by formal domestic students in tertiary education institutions by level of study

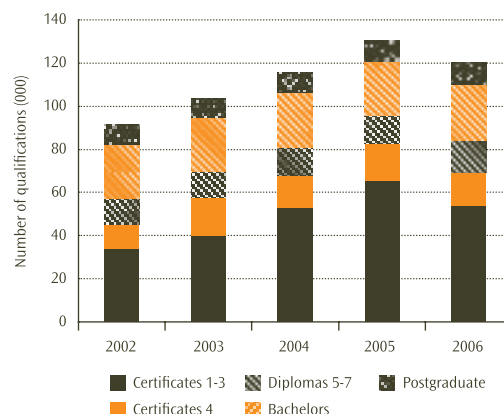


Figure 5.10: National certificates completed by level of study

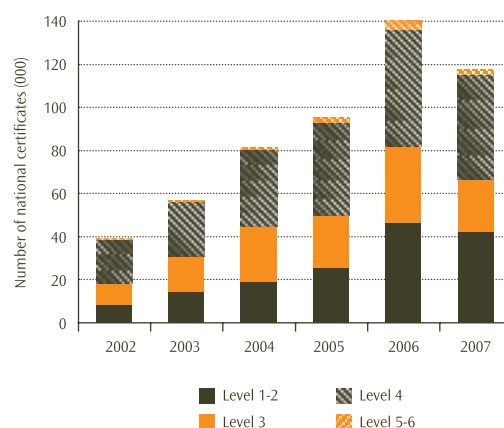
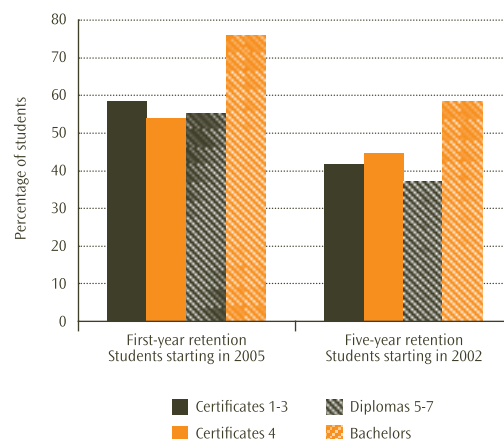


Figure 5.11: First-year and five-year retention rates for domestic formal students



* This category covers bachelors degrees with honours, postgraduate certificates and postgraduate diplomas.

Table 5.1: Size of the tertiary education sector by level of study

Estimated number of students/learners	Upper secondary	Post-secondary non-degree	Bachelors	Post-graduate	Total
Formal students					
Provider-based					
Domestic students (excl. industry training and targeted training)	17,100	122,000	128,000	32,900	421,000
International students (excl. industry training and targeted training)	4,650	13,000	19,100	5,040	39,600
Estimated students in non-government-funded providers	10,000	5,000	–	–	15,000
Targeted training programmes					
– Training Opportunities	16,500	–	–	–	16,500
– Youth Training	10,500	–	–	–	10,500
– Skill Enhancement	–	516	–	–	516
Students in qualifications of > 1 week's duration	213,000	140,000	148,000	37,900	503,000
Secondary-Tertiary Alignment Resource < 1 week's duration	15,900	398	216	–	16,500
Other students in qualifications of < 1 week's duration	55,600	5,060	239	3	60,200
Total provider-based students	284,000	146,000	148,000	37,900	579,000
Workplace-based					
– Learners in industry training (excl. Modern Apprenticeships)	114,000	60,800	–	–	175,000
– Learners in Modern Apprenticeships	1,180	9,660	–	–	10,800
– Gateway	8,240	–	–	–	8,240
Total workplace-based learners	123,000	70,400	–	–	194,000
Total provider- and workplace-based learners	408,000	216,000	148,000	37,900	773,000
Non-Formal students					
ACE* through tertiary education institutions					83,500
International students in non-formal qualifications					5,210
Adult literacy and English as a second or other language (estimated funded learners)					
ACE funded through schools					162,000
ACE through community organisations					Unknown
*Adult, community and other education not elsewhere classified.					
Student component-funded learners	167,000	120,000	129,000	34,500	418,000

Notes:

1. Provider-based students are counted in each qualification level for which they are enrolled, so the sum of the components will not add to the totals.
2. Training Opportunities, Youth Training, Secondary-Tertiary Alignment Resource, Gateway, and ACE programmes are included in chapters 7 and 10.
3. Industry training, including Modern Apprenticeships, is included in chapter 6.
4. Skill Enhancement programmes are included in chapter 8.

International tertiary education

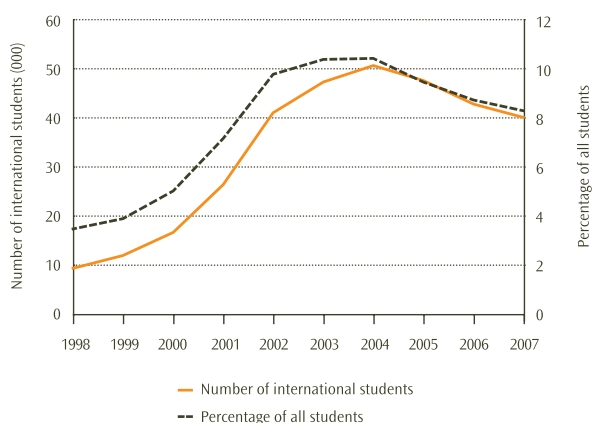
International students have become a vital part of the New Zealand tertiary education sector providing benefits not only to the economy but also to providers, educators and domestic students. The release of the International Education Agenda (Ministry of Education, 2007) signalled the government's vision for a high-value international education sector that contributes to a strong New Zealand economy.

Participation and revenue

Figure 5.12 shows that after rapid growth between 2000 and 2004 the number of international students enrolled at tertiary education providers has declined for three consecutive years. There were 40,000 international students in 2007, down 6.3 percent from 42,700 students in 2006 and down 21 percent from a peak of 50,400 students in 2004. Consequently, international students as a percentage of total student numbers have declined from 10 percent in 2004 to 8.3 percent in 2007.

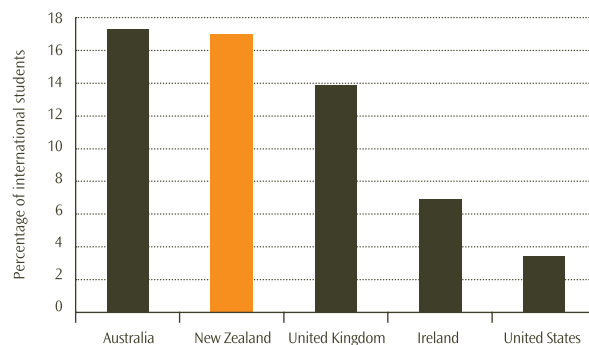
In 2004, 60 percent of all international students enrolled in formal tertiary education were from China. Between 2004 and 2007, the number of international students from China had almost halved from 30,400 to 16,400 students. Consequently, in 2007, students from China made up only 41 percent of all international students. The next largest numbers of international students in 2007 came from India, South Korea, the United States, Malaysia and Japan. The highest area of growth between 2003 and 2007 was in the number of students who came from the Middle East, particularly from Saudi Arabia and Oman, although, in terms of the number of students, this region made up only 2 percent of all international students in 2007.

Figure 5.12: International students in formal tertiary education



The Organisation for Economic Co-operation and Development (OECD) comparisons show that New Zealand ranked second after Australia in terms of the percentage of international students enrolled in tertiary education (Figure 5.13). While Figure 5.12 includes all students, Figure 5.13 includes only those students enrolled at diploma level and above for a semester or more. For this reason the percentage of international students in the New Zealand tertiary education system is higher in the OECD comparisons in Figure 5.13 than that shown in Figure 5.12 above.

Figure 5.13: Student mobility in tertiary education in 2005 for selected OECD countries



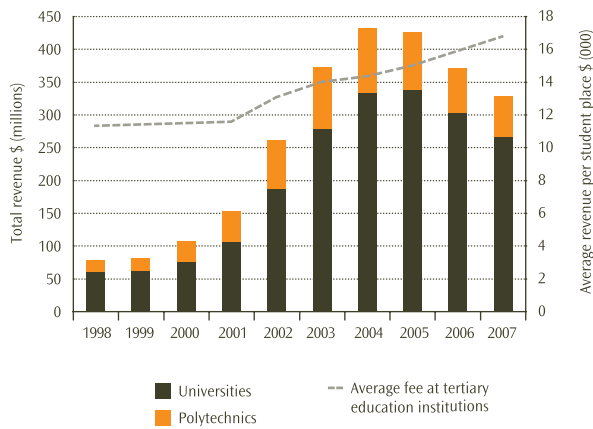
Source: OECD (2007), *Education at a glance: 2007 OECD indicators*, Table C3.1.

In a 2007 survey of international students in New Zealand (Ministry of Education, 2008), 64 percent of the respondents indicated that New Zealand was their first choice of study destination. The survey report stated that this appears somewhat less favourable than in Australia, where 79 percent³ of international students named that country as their first choice of study destination. For students who specified that New Zealand was not their first choice as a study destination, Australia, the United States, and the United Kingdom were the most commonly preferred study destinations. The most important factor influencing tertiary students' choice to come to New Zealand as a study destination was that it is an English-speaking country. Other influential factors were safety, the quality of New Zealand's education and the student's individual preference.

The enrolment of international students has become a major source of revenue for the tertiary education sector, especially for universities and polytechnics. Figure 5.14 shows that international fees revenue continued to fall in 2007 in response to falling student numbers. Tertiary education institutions collected \$330 million in international fees revenue and this contributed 8.9 percent to total tertiary education institution revenue. Overall, export education was estimated to be worth around \$1.5 billion to the New Zealand economy in 2007, making it the country's third largest services export behind tourism and transportation.

3. As measured by the Australian Education International report (Australian Education International, 2003) on international students in schools and colleges, universities, vocational educational training programmes and English language instruction schools.

Figure 5.14: International fees revenue and the average fee in tertiary education institutions



Source: Ministry of Education and the Tertiary Education Commission.

The enrolment of international students is not subsidised by the New Zealand government.⁴ International students pay fees to cover the full cost of their tuition. Although domestic tuition fees were frozen between 2001 and 2003 through the government’s fee stabilisation policy, no such constraint applied to international fees. Without this restriction, average tuition fees have increased significantly on an equivalent full-time student basis. Figure 5.14 shows that between 2001 and 2007 the average international tuition fee in tertiary education institutions increased by 45 percent from \$11,500 to \$16,700 (including goods and services tax). During the same period the average domestic tuition fee remained relatively unchanged.

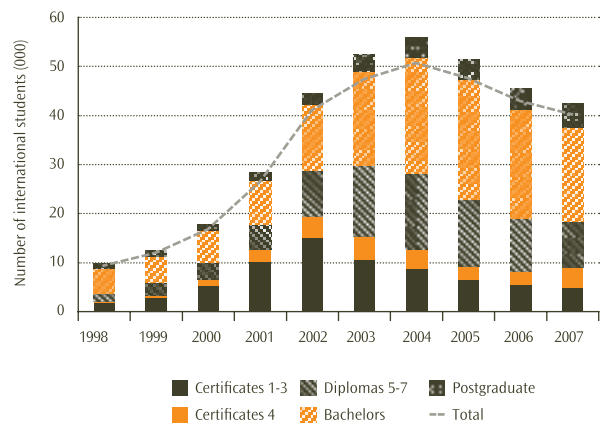
In the 2007 survey of international students in New Zealand the majority (72 percent) of respondents studying in tertiary education institutions said they were supported financially by their parents. Other sources of financial support came from the students themselves (11 percent), scholarships (6 percent), the students’ own government or employer (5 percent), or from a loan (4 percent). When students were asked how financially difficult it is for them and/or their family to pay for tertiary education in New Zealand, 20 percent of university students and 13 percent of polytechnic students said they found payment very difficult or extremely difficult.

The growth of international students between 1998 and 2003 was largely driven by enrolments in non-degree study.⁵ Over this six-year period, international students enrolled in non-degree study increased by almost 700 percent to reach 27,300 enrolments in 2003. Over the same period, degree enrolments also increased sharply, but at a lower rate – 270 percent. In 2003, almost 60 percent of international students were enrolled in non-degree study. However, between 2003 and 2007 there was a shift in the proportions of international students between non-degree study and degree study. Over this period, enrolments by international students in non-degree

4. Except that from 2006 international doctoral students have been funded on the same basis as domestic students.
5. Non-degree study includes some but not all English language study undertaken in New Zealand.

study decreased by 37 percent while student enrolments in degree study increased by 8 percent. As a result, in 2007, only 43 percent of international students were enrolled in non-degree study. The number of international students enrolled in postgraduate study has continued to grow, increasing from 1,910 in 2001 to 5,040 in 2007. Of note was the marked increase from 693 international doctoral students in 2005 to a total of 1,520 in 2007. This increase coincided with the policy decision to fund international doctoral students on the same basis as domestic students.

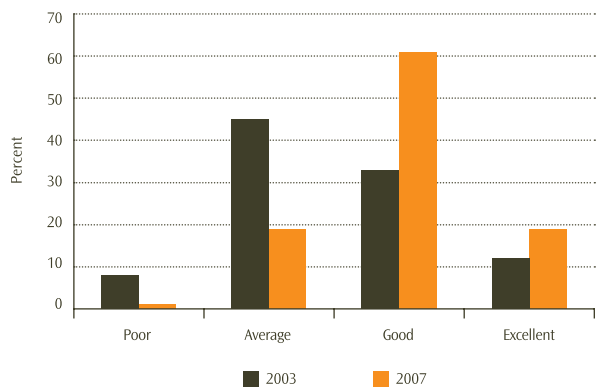
Figure 5.15: International students in formal tertiary education by qualification level



Note: Students who were enrolled in more than one qualification level have been counted in each level. Consequently, the sum of the students in each level may not add to the total number of students.

The 2007 survey of international students found that the majority (61 percent) of students enrolled in tertiary education institutions reported that their overall English language ability was good. Figure 5.16 shows that this was an improvement on the self-rated English language ability of international students in 2003, when the majority reported their overall ability as average. In addition, in 2007 tertiary students reported having considerably better English language ability than school and English language students.

Figure 5.16: Self-rating of overall English language ability for international students at tertiary education institutions



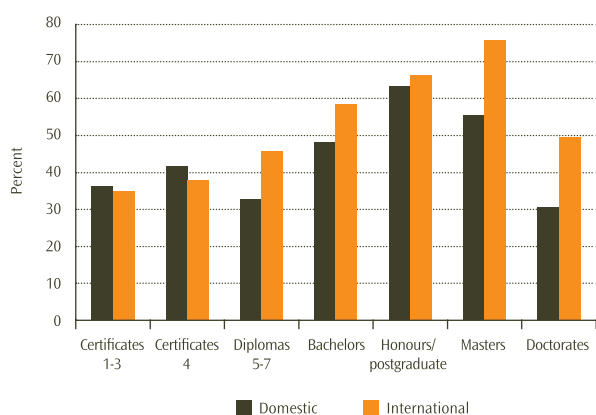
Source: Ministry of Education (2008), *The experiences of international students in New Zealand: report on the results of the national survey 2007*, Table 3.12.

Achievement

International students generally have higher completion rates than domestic students in terms of both qualifications and courses.⁶ Figure 5.17 shows that, as is also the case with domestic students, qualification completion rates are higher for higher-level qualifications. The only exception to this is at doctoral level, where all students generally take longer to complete their qualification. Long-term completion rates confirm that eventually doctoral students complete at a similar rate (around 70 percent) to other postgraduate levels.

While qualification completion rates are generally higher for international students than domestic students for most qualification levels, this is not the case for certificates. This may in part reflect the fact that many international students enrolling in qualifications at this level are doing so only to complete particular courses that may be required as part of a different qualification, such as a bachelors degree. The difference in qualification completion rates between international and domestic students was most pronounced at masters and doctorate level.

Figure 5.17: Five-year qualification completion rates by qualification level for international and domestic students



Note: This figure refers to the percentage of students who started study in 2002 and who completed a qualification in the five years up to and including 2006.

International students generally complete qualifications in a shorter time than domestic students. Because of this, the difference in qualification completion rates reduces (but still remains) over time, reflecting the fact that domestic students are more likely than international students to be studying part-time and so take longer to complete. Additionally, many international students would have left New Zealand after concluding their studies and therefore would not have the opportunity to return and complete their qualification. In particular, for students completing bachelors-level qualifications the difference reaches a peak of around 11 percentage points after three years of study and then reduces to around 4 percentage points after seven years.

6. The term 'course' refers to a distinct module, paper, or unit of study that forms part of a larger programme of study that may or may not lead towards a recognised qualification. This is different from other countries, such as Australia or Britain, where the term 'course' is commonly used to refer to a programme of study or qualification.

International students from Asia completed qualifications at a higher rate than students from other regions. Indeed, international students from regions other than Asia completed qualifications at a lower rate than domestic students. Qualification completion rates for bachelors-level international students from Europe and North America were around half that of students from Asia and 15 percentage points lower than that of domestic students. A possible explanation for this is that many European and North American students undertake study abroad programmes for a year at a New Zealand tertiary provider, which counted towards a qualification they were undertaking in their home country. This means that they had no intention of completing a New Zealand qualification. Around 45 percent of European students and 60 percent of North American students spent only one year studying in New Zealand. This compared to 25 percent of students from Asia.

Figure 5.18 shows that at non-degree level, the course pass rate⁷ for international students is higher than that of domestic students. In particular, the course pass rate in 2006 for international students in level 1 to 3 certificates was 13 percentage points higher than that of domestic students. However, at bachelors and postgraduate levels, the course pass rates for international and domestic students were very similar. This is an intriguing anomaly given that the difference in qualification completion rates is most pronounced at bachelors and postgraduate level. There are three likely factors associated with international students achieving a higher qualification completion rate than domestic students even though their course pass rates were similar.

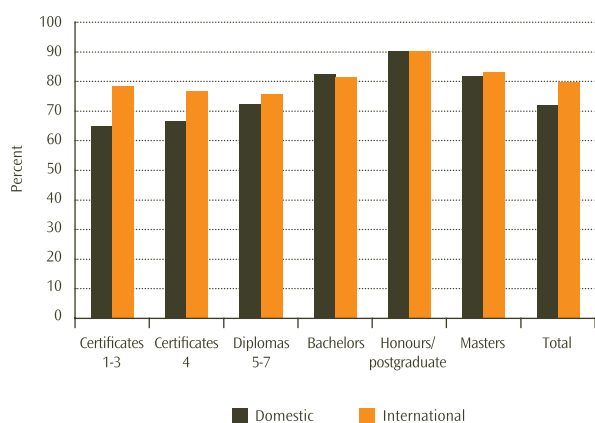
Firstly, as has already been pointed out international students were more likely than domestic students to be studying full-time and intramurally, both of which are factors associated with higher rates of qualification completion. However, a Ministry of Education report has shown that even after adjusting for these study-related and other demographic differences, international students were still 1.3 times more likely than domestic students to complete a bachelors degree after six years (Scott and Smart, 2005).

The report goes on to offer a likely second factor: "...international students are subject to a very different set of influences than their domestic counterparts. Principal among these is that most pay upfront the full cost of their tuition, which on average in 1998 meant over \$8,000 more than their domestic counterparts (who were also able to borrow from the Student Loan Scheme). Having undertaken this financial commitment, which may incur some real or moral obligation to family, one might assume that there is a higher degree of motivation and commitment to succeed..."

7. The course pass rate is the percentage of students starting a course who successfully complete or pass it. The term 'pass rate' is used to refer to successful completion, or passing, as opposed to those students who complete the course but are academically unsuccessful.

The third factor is that domestic students were probably more likely to be undertaking tertiary study without completing a qualification as their main objective. These may include, for example, those who already have a qualification, or those in employment wishing to update or gain new skills and knowledge in a specific area. Additionally, there are those domestic students who will leave a partly completed qualification to enter the labour market in times of higher employment.

Figure 5.18: Course pass rates in 2006 by qualification level for domestic and international students



Educational experiences in New Zealand

The 2007 survey of international students found that, overall, international students were moderately satisfied with the progress they were making in their studies. Almost a third of students indicated that they were either very satisfied or extremely satisfied with their progress and two-fifths said that they were moderately satisfied. The survey also found that although academic demands were not on the whole regarded as challenging, the most difficult tasks were seen as:

- making oral presentations
- taking exams, and
- writing assignments.

In contrast, the academic tasks that students had the least difficulty with were:

- understanding teachers/lecturers
- taking notes during class, and
- completing assignments on time.

The report stated that "... the results show that international students adjust well to the New Zealand education system and its demands". In addition, the survey found that, overall, students reported a moderate to good amount of cultural inclusiveness in their educational environments. However, this varied across types of educational institutions, with polytechnic and university students appearing slightly less satisfied. Two-fifths of university students and half of polytechnic students agreed that they 'feel included' in their class.

Pathways to further study, work and residency in New Zealand

Secondary to tertiary transitions

Of the 2,760 foreign fee-paying⁸ students who left secondary school during 2005 after having gained some credits on the National Qualifications Framework, 31 percent had enrolled in some form of tertiary education in New Zealand by the end of 2006. This included 24 percent of students who enrolled at a university. Foreign fee-paying students were more concentrated in university study than their domestic counterparts. While international and domestic students moved directly into university study at similar rates, 30 percent of domestic students undertook study in other areas of the tertiary education sector, compared to 7 percent of foreign fee-paying students.

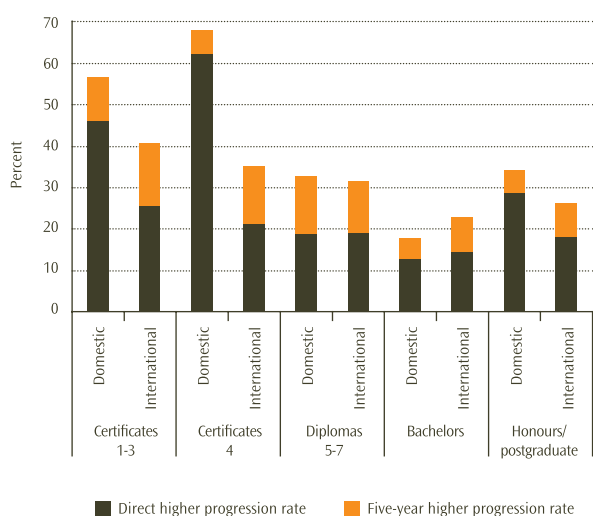
Progression to further tertiary study

Figure 5.19 shows that after completing a non-degree qualification, international students were more likely to progress directly into higher-level study than domestic students. It is likely that international students intentionally used these levels as a springboard into bachelors-level study. Domestic students were more likely to be studying vocational-type qualifications at non-degree level. Possibly, many qualifications completed by international students at non-degree level are prerequisite language qualifications. These differences reduce over time as domestic students are more likely to remain in New Zealand and progress to higher-level qualifications later, while many international students will leave New Zealand. A similar trend occurred for those international students who complete a postgraduate certificate or diploma and use that qualification to springboard into masters or doctorate study.

However, those international students who completed a bachelors-level qualification were less likely than domestic students to progress on to postgraduate study. This suggests that a bachelors-level qualification is the end result of their studies in New Zealand for many international students and they return home after completing it.

8. Foreign fee-paying students differ slightly from tertiary education's definition of an international student.

Figure 5.19: Direct and five-year higher progression rates by qualification level for domestic and international students



Notes:

1. The direct higher progression rate is the percentage of students completing a qualification in 2002 who enrolled in higher-level study in the following year.
2. The five-year higher progression rate is the percentage of students completing a qualification in 2002 who enrolled in higher-level study over the following five years.

Transition to work and residence

In 2007, the Department of Labour carried out research to identify the main pathways of international students from study to work or residency in New Zealand, and the characteristics of students who make this transition. This research examined the patterns of transition to work or permanent residency in New Zealand for 47,400 international students who had their first student permit approved between July 1999 and June 2001. This research included international students from the school, tertiary and English language sectors.

The research found that 27 percent of the international students commenced employment or permanent residency in New Zealand by the end of March 2006. Fifteen percent transitioned directly from study to residency in New Zealand, 6 percent moved from study to work and then to residency, and 6 percent moved from study to work but did not take up residency in New Zealand.

There was not a great deal of difference in the percentage of international students who commenced employment or became a New Zealand resident based on the sector in which they studied. Students whose study pathways included English language studies and tertiary education had the highest transition rate to work and residency (30 percent). International students whose study pathways included tertiary education were more likely to commence employment than students from school or English language studies.

Rates of transition to work and residency varied considerably among the main nationalities. The rate of transition for Chinese students was 32 percent – most commonly through the skilled/business stream following English language and tertiary studies. Students

from Fiji (60 percent) and the United Kingdom (56 percent) were more likely to commence employment or become a New Zealand resident (especially the latter) than students from the other main source countries. Students from Germany and the United States were less likely than other nationalities to commence employment or become a New Zealand resident.

Twelve percent of international students moved from study to work. The most common work permit held was labour market tested (41 percent). Seven percent transitioned via a working holiday scheme, a route particularly common for Japanese students. Eighteen percent of international students whose pathways included tertiary education studies moved from study to work.

It is interesting to compare these findings with the intentions of international students to reside and/or work in New Zealand, as reported in the 2007 survey of international students. Polytechnic students were more likely than university or English language students to stay on and work in New Zealand, with 76 percent of polytechnic students indicating an intention, compared to 54 percent of university students. Students who indicated that they would apply for permanent residency in New Zealand were more likely to come from a polytechnic (81 percent) than a university (67 percent). It would appear then that there is a shortfall between the intentions of international students to remain in New Zealand and the reality of this occurring.

Life in New Zealand

The 2007 survey of international students found that 37 percent of university students and 30 percent of polytechnic students indicated that they “were satisfied with their life in New Zealand”. This percentage is considerably lower than that of international students from the school and English language sectors who were satisfied with their life in New Zealand. The survey found that strong relationships existed between students’ satisfaction with life in New Zealand and their:

- selection of New Zealand as their first choice as a study destination
- satisfaction with the progress they were making in their studies
- satisfaction with the level of support they received, and
- having more close friends in New Zealand.

The areas that tertiary students reported having the most difficulty with in living in New Zealand were finding work, making New Zealand friends, accessing entertainment, and using public transport.

The survey found that 45 percent of university students and 48 percent of polytechnic students were currently working part-time. The most common areas for these students to be working in were hospitality and retail/sales. The main reasons students gave for choosing to work were to meet living and tuition costs, to seek work experience directly relating to their area of study and to gain general work experience in New Zealand. Surprisingly, only 6 percent indicated that they worked in order to improve their English. The survey also found that students choosing to work were also more likely to have indicated their future residency plans.

New Zealand students overseas

The International Education Agenda stresses that international education means more for New Zealand than having international students enrolled in New Zealand education institutions. It states that “international education gives students a global context, which helps them understand how local issues are shaped by world events. It develops their global citizenship skills and enhances their understanding and respect for other cultures, and their own national identity”. Key to achieving this is New Zealanders having the opportunity to study overseas and international student exchanges are a vital part of this.

In 2007, 620 New Zealand students studied abroad on international student exchanges. Ideally, exchanges will be reciprocal in terms of nature and numbers but New Zealand has greater numbers of inbound than outbound exchange students and a lower than desired uptake of exchange options. In 2007, the Ministry of Education commissioned research to identify the factors that assist and inhibit the development of international student exchange schemes in New Zealand tertiary education institutions and in encouraging New Zealand students to study abroad.

The research findings from a student survey and from case studies of five tertiary education institutions indicated that, similar to the United Kingdom and Australia, New Zealand’s overseas study exchanges are concentrated primarily in the fields of business, languages, humanities and law.

There appears to be a wide national variation in opportunities and the rates of participation in student exchanges among tertiary institutions. The case studies also found that in general, academic staff outside language faculties had limited involvement in and knowledge of exchanges. The studies found that there appears to be very little variation in student exchange models available. Students are often offered only the one option of a semester with an overseas university or a short course specific to a particular degree programme. The findings indicated that there is a lack of alternative choices and meaningful student support for student exchange and study abroad opportunities.

The research found that awareness and knowledge of exchange programmes was relatively low among students. The English-speaking countries, the United States, Canada, the United Kingdom and Australia dominated the choice of preferred destinations for an overseas exchange, reflecting the traditional ‘overseas experience’ destinations for young New Zealanders and the fact that over 80 percent of New Zealanders are monolingual. Relatively few students appear to regard Asia, Central or South America as likely places for an overseas exchange.

Students stated that the two main benefits from studying overseas were:

- the exposure to a different culture and language it would provide, and
- the chance to see if they would like to live and work overseas.

Other benefits included:

- the prestige of attending a top overseas university and the benefits that this accords
- the opportunity to be immersed in another language, and
- access to subjects not available in New Zealand.

Students saw that the main obstacle to participating in exchange programmes was financial, with the perceived cost of studying overseas a major obstacle. Other important obstacles included:

- the psychological barrier of leaving friends and family
- lack of confidence among some students in their ability to do well at an overseas university
- concerns about the effect of an exchange on their academic performance, and
- preferring to finish their degree before going overseas.

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Literacy and numeracy in New Zealand: findings from the Adult Literacy and Life Skills Survey

The Adult Literacy and Life Skills (ALL) Survey is an international survey of adults' skills in literacy, numeracy and problem-solving. It provides information on the relationships between adults' skills and their socio-economic and demographic characteristics. Cross-country and within country comparisons of the survey findings can throw light on questions about the causes and consequences of people's different skill profiles and the associations between their skills and social and economic advantage.

New Zealand participated in the Adult Literacy and Life Skills Survey in 2006 and a similar survey, the International Adult Literacy Survey (IALS), in 1996. The first findings from the Adult Literacy and Life Skills Survey were released in December 2007 and further reports have provided an initial view of New Zealanders' skills. This article summarises these initial findings. Further work will progressively investigate the data in more depth.

Initial key findings from ALL

- **From 1996 to 2006, the proportion of the adult population with very low literacy skills reduced substantially.**
- **Similar changes have occurred in Canada, the United States and Australia.**
- **New Zealand adults' performance in literacy and numeracy is similar, on average, to Australia, better than the United States but not quite as good as Canada.**
- **Greater literacy and numeracy skills are strongly associated with higher levels of education, and with being employed or a student rather than with being unemployed.**

What is ALL?

The Adult Literacy and Life Skills Survey is an international study involving some 12 countries.⁹ It builds on the International Adult Literacy Survey which was undertaken in 24 countries in 1996, including New Zealand. The Adult Literacy and Life Skills Survey used a nationally representative sample of adults aged between 16 and 65 years and involved over 7,000 interviews.

The Adult Literacy and Life Skills Survey measured skills in four domains:

- **prose literacy** – understanding text such as editorials, news stories, brochures
- **document literacy** – understanding information in tables, forms, diagrams

- **numeracy** – processing mathematical and numeric information in differing situations, and
- **problem-solving** – analytical reasoning in situations where no routine procedure exists.

Prose and document literacy were measured in the same way in 1996 and 2006. This allows comparisons over time in these domains, as well as between countries.

In addition, the survey collected data on a range of socio-economic, health and demographic variables, including the use of information and communication technology and participation in adult education and training. This provided new information on the relationships between skill levels and the labour market, economic growth, and education systems and services. The Adult Literacy and Life Skills Survey results also provide comparative information for New Zealand and other countries in the Organisation for Economic Co-operation and Development. This helps understanding of how different countries' economic and education situations may influence people's skill profiles and their economic and social advantage.

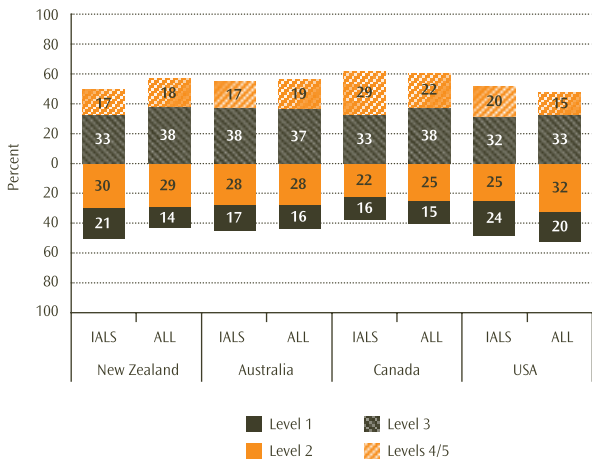
International comparisons over 10 years

From 1996 to 2006 the proportion of the adult population of New Zealand with the lowest literacy (Level 1) skills shrank substantially. However, the proportion with Level 2 literacy skills has persisted. Similar changes have occurred in Canada, the United States and Australia.¹⁰ In New Zealand, the improvement in document literacy has been more pronounced than in Canada, the United States and Australia. New Zealand adults' average performance in literacy and numeracy is similar to Australia, better than the United States but not quite as good as Norway. Figure 5.20 shows international comparisons over 10 years for document literacy skills.

9. Canada, the United States, Bermuda, the Mexican state of Nuevo Leon, New Zealand, Australia, Korea, Italy, Norway, Switzerland, Hungary and the Netherlands.

10. The New Zealand and Australian data collections took place for IALS in 1996 and for ALL in 2006. Canada's and the United States' took place in 1994 and 2003.

Figure 5.20: International document literacy – distribution of levels in selected countries



Note: The International Adult Literacy (IALS) Survey was held over the period from May 1996 through to June 1996. The Adult Literacy and Life Skills Survey (ALL) was held over the period from May 2006 through to March 2007.

The adult population of New Zealand has large subpopulations with low numeracy and low problem-solving skills. The adult populations of Canada, the United States and Australia also have large subpopulations with low numeracy skills. In addition, Canada and Australia have large subpopulations with low problem-solving skills.¹¹

In New Zealand, established immigrants have higher literacy and numeracy skills, overall, than recent immigrants. Established immigrants also make up a larger proportion of the adult population than recent immigrants. By contrast, in Canada and the United States, recent immigrants have higher literacy and numeracy skills, overall, than established immigrants. In these countries, established immigrants also make up a larger proportion of the adult population than recent immigrants. Immigrants (both recent and established) in New Zealand have higher levels of prose and numeracy skills than those in Canada and the United States.

Education

Greater literacy, numeracy and problem-solving skills are strongly associated with higher levels of study. This is illustrated for numeracy in Figure 5.21.

Figure 5.21: Numeracy – distribution of levels by study level



Work and income

Students and people in employment have, on average, the greatest skills in literacy, numeracy and problem-solving. Homemakers and people who are retired have lower levels of these skills while the unemployed have the lowest skills. Figure 5.22 shows levels of numeracy skill by labour force status.

Figure 5.22: Numeracy – distribution of levels by labour force status



People whose incomes fall into the top 40 percent of New Zealand's income distribution tend to have higher numeracy and document literacy skills.

The occupation group 'professionals' had the highest numeracy skills overall and those employed in the 'elementary' occupations the lowest.

11. Problem-solving was not measured in the United States.

Agriculture and fisheries industry employees had the lowest numeracy skills overall, and employees in the finance and real estate and health and education industries the highest.

Gender

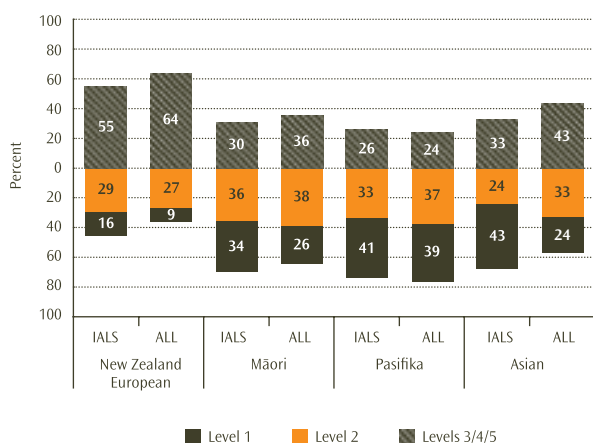
For both women and men, average prose literacy skills remained relatively stable between 1996 and 2006. Women had relative strength in prose literacy and men had relative strength in numeracy.

For both women and men, on average, higher income is associated with greater prose literacy skills and numeracy skills. The mean income for men was at least two deciles higher than for women with the same prose literacy and numeracy skills. For men and women employed full-time, the mean income for men was at least one decile higher than for women with the same prose literacy and numeracy skills.

Ethnicity

The overall prose literacy skills of the New Zealand European, Māori and Asian ethnic groups rose. However, those of the Pasifika ethnic group decreased. The overall document literacy skills of the New Zealand European, Māori and Asian ethnic groups rose, while those of the Pasifika ethnic group remained relatively stable, as shown in Figure 5.23.

Figure 5.23: Document literacy – distribution of levels by ethnic group



The New Zealand European, Asian and Other ethnic groups were over-represented in the higher performers in numeracy skills, and the Māori and Pasifika ethnic groups were over-represented in the low performers.

Language most frequently spoken in the home

Those who most frequently spoke a language other than English in the home had substantially lower overall prose literacy in English and numeracy skills (measured in English) than those who most frequently spoke English. This difference was less marked for numeracy than for prose literacy. However, there was an increase between 1996 and 2006 in the overall prose literacy skills for both groups.

Age

The results for each skill domain showed a strong age effect – 25 to 54 year-olds had, on average, stronger skills compared with 16 to 24 year-olds and 55 to 65 year-olds. This is consistent with a pattern of skills accumulating through people's middle decades of life and work.

In prose and document literacy, the performance of 16 to 24 year-olds in 2006 was roughly comparable to the performance of 16 to 24 year-olds in 1996. However, the document literacy performance of older age groups in 2006 was higher than the equivalent age groups in 1996, particularly for 55 to 65 year-olds.¹²

As would be expected, the cohort aged 25 to 34 years in 2006 improved their performance in prose and document literacy compared with their performance when they were aged 16 to 24 years in 1996.

More information

You can find more results from New Zealand's Adult Literacy and Life Skills Survey, and links to findings for other countries, at www.educationcounts.govt.nz/goto/all. More in-depth analysis of the Adult Literacy and Life Skills Survey will be published in 2009.

12. The people aged 55 to 65 years in 1996 were born between 1931 and 1941. That generation had lower participation in education, on average, than those born between 1941 and 1951, who represented the 55 to 65 years age band when the Adult Literacy and Life Skills Survey was conducted in 2006.

Transitions from school to tertiary study

How does a student's performance at school affect their decision to enter tertiary study? And, how well do students do in tertiary education in their first year? How does school achievement compare with other factors? Is the influence of school achievement the same for males and females, or for different ethnic groups? How well can NCEA results predict a student's pass rate in tertiary-level study? Research published this year sheds new light on these questions.

Key findings

Two reports published in 2008 reviewed the link between school leavers' NCEA results and their tertiary education choices and how likely they were to pass their first-year courses when studying at bachelors level. They found that:

- NCEA results can be used to explain the relationships between performance at school, the choice of tertiary study and students' first-year pass rates at bachelors level reasonably well
- how well a student did at school was the strongest influence on their choice of tertiary education and their first-year pass rate in degree-level study. Students with higher NCEA results were more likely to go on to bachelors-level study and pass their first-year courses than those with lower NCEA results
- a student's performance at school, although still a significant factor, had a weak influence on their decision to go into industry training or undertake certificate or diploma study, and
- students who did well at school and studied full-time at degree level were more likely to pass their first-year courses. Students in health, education or creative arts degrees were also more likely than others to pass their first-year courses.

We know that how well you do at school makes a difference, both to whether you undertake further study and to how well you achieve at this. Two recent Ministry of Education reports¹³ set out to explore the nature of this relationship using information on school achievement under the NCEA system. One study also explored the relationship between doing well at school and continuing on to industry training and non-degree provider-based study.

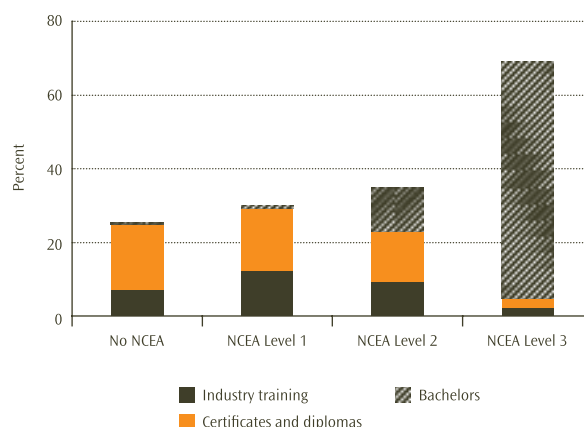
Both studies looked at students who left school in 2004. The analyses included a new measure that gives a sense of how well each student performed in the NCEA achievement standards. This measure, known as the 'expected percentile', looked at the results of each student in achievement standards – 'excellence', 'merit', 'achieved' or 'not achieved' – and combined them into a score on a scale of 0 to 100.

The analyses used regression on a dataset that linked the NCEA results to tertiary education enrolments and information on first-year degree-course completions and industry training.

Success at school leads on to tertiary study

The first report – *Post-school choices* – examined the association between how well students did at school and their decision to go on to tertiary study. The report found that higher NCEA results were strongly associated with students' choosing bachelors-level study but more weakly associated with their going into industry training. The relationship between the NCEA results of school leavers and their participation in the various types of tertiary study is shown in the following graph.

Figure 5.24: School leavers by tertiary study type and highest NCEA level



The link between success at school and enrolling for degree-level study is already well established through research. However, this report sheds new light on whether doing well at secondary school was as strongly associated with industry training and non-degree study at a tertiary education provider as it was with degree-level study.

The study found that, when other factors were controlled for, school leavers with NCEA Level 2 or 3 were equally likely to enter employment and start industry training as to begin employment without doing further study. The study also found that school leavers with NCEA Level 2 were significantly more likely to choose industry training than those with Level 1. These results suggest that NCEA Level 2 provides a good base from which school leavers are able to enter industry training. This finding may be partly due to NCEA Level 2 being a prerequisite for entry into the Modern Apprenticeships scheme. There appeared to be no advantage to those intending to enter industry training in attaining NCEA Level 3.

13. Ussher (2008a) and Scott (2008).

Better results in NCEA standards were also associated with an increase in the likelihood of a school leaver choosing bachelors-level study rather than other post-school options. This is not surprising given it is common knowledge that higher-achieving students are more likely to study at bachelors level.

Previous studies have found that students decide whether they will enter tertiary education very early on. Leach and Zepke (2005); Nguyen and Taylor (2003); and Harker et al (2001) found that more than half of the secondary school students had made the decision to attend university in year 11 or even earlier. Therefore, it is possible that students who decide early in secondary school to study at degree level have a stronger motivation to perform well in NCEA.

In a series of supplementary fact sheets,¹⁴ Ussher further explored whether the performance of selected groups of students at school influenced their decision to enrol in tertiary study. These studies showed, after controlling for other factors, that:

- Māori male students were less likely than Māori female students to study at bachelors level. This was not the case for European and Asian students
- high-achieving Māori students were more likely than European and Asian high achievers to go on to industry training rather than bachelors-level study
- the decision of Māori males to study at bachelors level was more dependent on their gaining good NCEA results compared with Māori females
- gaining NCEA Level 2 did not increase the likelihood of students from low-decile schools entering industry training. By contrast, gaining NCEA Level 2 did increase the likelihood of students from higher-decile schools entering industry training
- the influence of peers was more strongly associated with the post-school choice of students from low-decile schools than it was for students from high-decile schools, and
- students whose studies involved a majority of unit standards were more likely to go into vocational-based tertiary education such as industry training and less likely to study at bachelors level than students who undertook more achievement-based standards.

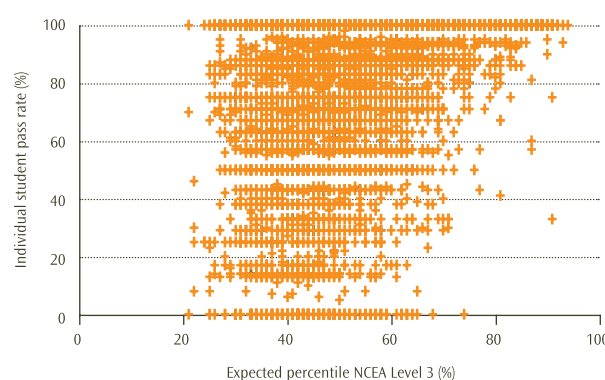
Achievement in secondary school and tertiary study

The second report – *How does achievement at school affect achievement in tertiary education?* – focused mainly on degree study. And, as with the first report, it used the measure of the ‘expected percentile’ in the regression analysis that looked at pass rates in year one in tertiary study.

The study found support for the relationship between NCEA school results and students’ first-year pass rates in tertiary study. The relationship was strongest for those enrolling in degrees and weaker for those enrolling at below-degree level.

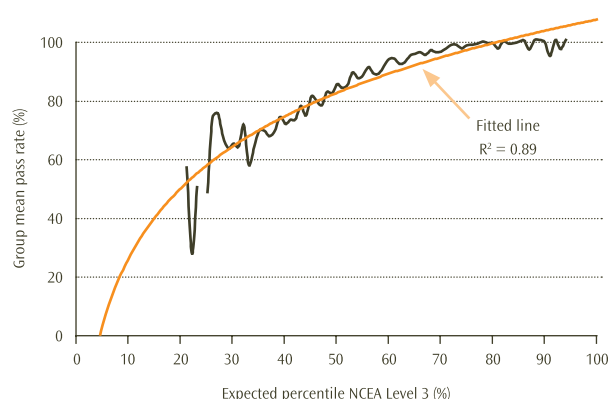
For school leavers enrolling in bachelors degrees, a quarter of the variation in their first-year pass rates was explained by the expected percentile – the measure of the students’ NCEA results. The expected percentile for students who studied NCEA Level 3 had a moderate correlation with their first-year degree-course pass rates ($r=0.4$) as shown in Figure 5.25.

Figure 5.25: NCEA results partially predict the pass rate for first-year degree students



When school leavers with the same expected percentile were grouped together, the group’s average first-year degree-course pass rate could be determined almost entirely from the expected percentile ($R^2=0.9$). This result is shown in Figure 5.26.

Figure 5.26: NCEA results closely predict the pass rate for groups of first-year degree students



Whether a student continued their tertiary study after their first year or not was less dependent on their school NCEA result than on whether or not they were studying full-time. The expected percentile and full-time study were the most important of all the factors tested and they explained 11 percent of the variation as to whether students continued their study or not after the first year.

14. Ussher (2008b, 2008c and 2008d).

At the time of the study, in 2008, the dataset did not contain enough years of data to show how many of these students would go on to complete their bachelors degree. In future studies, the extra years of data will be able to provide a better indicator of tertiary achievement.

Field of study was the second largest predictor, after the expected percentile, of the first-year degree-course pass rate – with health, education and creative arts students more likely to pass all their first-year degree courses and business, engineering and science students less likely to pass all their courses. Field of study was not, however, a significant factor in predicting whether a student would discontinue studying in or after their first year of study.

Students studying full-time for the full year were more likely to pass all their courses than part-time students. Full-time, full-year students were also significantly less likely to stop studying after their first year.

A student's expected percentile, field of tertiary study and full-time/part-time status explained 31 percent of the variation in their first-year degree-course pass rates. The remaining factors in the model only explained a further 2 percent of the variation in these pass rates.

The study also explored the impacts of a number of other demographic and study-related factors. Students from state schools were more likely to pass all their first-year degree courses than students from private schools, but the effect was small. Students from single-sex schools also had a statistically significant lower likelihood of passing all their first-year degree courses than students from co-educational schools, but this effect was also small. In fact, this factor became insignificant when controlling for the gender of the student and whether the school was private or public. The likelihood of a student discontinuing study after their first year of tertiary study was not affected by whether a school was private or public, or single-sex or not.

Māori and Pasifika students were less likely to pass all their first-year degree courses than students from other ethnic groups even after controlling for their school results. Māori students were also more likely to discontinue their degree study after their first year. A subsequent study (Earle, 2008) went on to show that for students who studied at NCEA Level 3, the relationship between the students' expected percentile and the passing of all first-year degree courses was slightly weaker for Māori than for the other ethnic groups.

Students undertaking business or science subjects at school were statistically more likely to pass all their first-year degree courses, after controlling for other factors, while those doing computing at school were less likely to pass all their courses. However, the magnitude of these effects was small. Studying humanities, arts and crafts, or engineering and technology at school did not influence the likelihood of passing all first-year degree courses. School subject was not a significant factor in whether a student discontinued their study in or after the first year of study.

Gender was not a significant factor in predicting whether or not a student passed all their first-year degree courses, but it was a statistically significant factor in the likelihood of a student discontinuing their study after the first year of tertiary study. Women were less likely than men to discontinue studying after their first year, after controlling for all other factors.

The number of years of secondary schooling, a student's age, the decile of their school, and the size of their school were not significant factors in whether a student passed all their first-year degree courses, after controlling for other factors.

The study suggests that the NCEA results are able to explain the relationship between a student's performance at school and their pass rate in tertiary study reasonably well. The expected percentile measure provided a useful tool for analysing this relationship. For individual students, their NCEA results explained about a quarter of the variation in their first-year degree-course pass rate. When school leavers were grouped by their expected percentile, the group's average first-year degree-course pass rate was able to be correctly estimated in 90 percent of the cases. The extent to which students' NCEA results mattered using the expected percentile measure very closely mirrored studies conducted in the 1950s based on University Entrance, School Certificate, and other previous examination systems.¹⁵

The influence of a student's NCEA results on whether they discontinued their study in or after the first year of study was smaller, and secondary to full-time/part-time status.

Initial results also indicated that performance at school as measured by expected percentile appeared less important for non-degree-level study. Its influence on workplace-based outcomes is still to be tested. Both these areas remain the subject of future research, as does the question of the impact of secondary school performance on longer-term qualification completion and labour market outcomes.

This article is based on the following reports:

Scott, D. (2008) *How does achievement at school affect achievement in tertiary education?* Wellington: Ministry of Education.

Ussher, S. (2008a) *Post-school choices, How well does academic achievement predict the education choices of school leavers?* Wellington: Ministry of Education.

Ussher, S. (2008b) *Post-school choices – Māori students*, Wellington: Ministry of Education.

Ussher, S. (2008c) *Post-school choices – High achieving students*, Wellington: Ministry of Education.

15. See Scott (2008) pp 6-7 for a summary of these earlier studies.

Ussher, S. (2008d) *Post-school choices – unit standards*, Wellington: Ministry of Education.

Earle, D. (2008) *He titiro ano i te whāinga – Māori achievement in bachelors degrees*, Wellington: Ministry of Education.

These reports can be found on the Education Counts website:
www.educationcounts.govt.nz/publications/tertiary_education

Other studies referenced in this article:

Harker, D., Slade, P. & Harker, M. (2001) Exploring the decision process of ‘school leavers’ and ‘mature students’ in university choice, *Journal of Marketing for Higher Education*, 11(2), pp 1-20.

Leach, L. & Zepke, N. (2005) *Student decision-making by prospective tertiary students*, Wellington: Ministry of Education.

Nguyen, A. N. & Taylor, J. (2003) Post-high school choices: new evidence from a multinomial logit model, *Journal of Population Economics*, 16, pp 287-306.

