

5 AN OVERVIEW OF LEARNERS IN TERTIARY EDUCATION

5

SUMMARY

There were 502,000 students enrolled in all types of formal tertiary qualifications at providers in 2008. Of these, 39,800 were international students, 29,100 were in targeted training programmes and 38,800 were students in courses of less than one week's duration.¹ In addition, 195,000 learners were engaged in industry-based training, including 12,100 in Modern Apprenticeships. There were also 9,690 school students in Gateway programmes, which are designed to help secondary school students experience tertiary education and achieve outcomes such as gaining employment or achieving credits on the National Qualifications Framework. Non-formal education, such as adult and community education attracted an estimated 223,000 enrolments. During 2008, 12 percent of the population aged 15 years and over participated in some form of tertiary learning with a tertiary education provider and a further 5.8 percent were undertaking formal learning in the workplace.

The number of students formally enrolled at tertiary education providers in courses of more than one week's duration fell in 2008. This was primarily due to the ongoing decline, since 2005, in the number of domestic enrolments in level 1 to 4 certificate courses. Also, in recent years, there have been significantly fewer international enrolments at bachelors level and in level 5 to 7 diplomas. Before 2005, the number of formally enrolled students had grown strongly for many years (Figure 5.2).

The introduction in 2003 of funding caps on provider-based enrolments at private training establishments, and the subsequent review of non-degree qualifications, occurred at a time when the unemployment rate was falling steadily. This led to more young people entering the workforce rather than participating in tertiary study. The more recent declines in domestic, provider-based enrolments can also be seen against the significant rises in workplace-based learning.

In 2008, workplace-based study continued to increase. An increased proportion of the population aged 15 years and over have been taking part in industry training in recent years.

Partially offsetting the decreases in domestic certificate enrolments were increases in 2007 and 2008 in the number of students in bachelors degrees, as the 'birth blip' (those born between 1989 and 1993) continued to move from school into tertiary education. There were also more 20 to 24 year-olds enrolled in bachelors degrees in 2008. As a result, the amount of study, in terms of equivalent full-time student units, only fell slightly as more people studied higher-level and longer-duration qualifications. In 2008, domestic equivalent full-time student units increased by over 2 percent at each of bachelors level, honours degrees, postgraduate certificates and diplomas (level 8 qualifications) and doctorate level (Figure 5.2). When converting the number of people in provider-based formal study to equivalent full-time students, enrolments fell by less than 1 percent in 2008. Additionally, while the percentage decrease in international equivalent full-time student units in 2008 was bigger than that for domestic students, due mainly to fewer bachelors degree students, there were considerable increases in international equivalent full-time student units at every other qualification level. The underlying trend in international enrolments appears to be one of upward movement as the number of first-year enrolments increased by 4.4 percent in 2007 and 8.6 percent in 2008. In terms of equivalent full-time students, international formal provider-based students represented 11 percent of all enrolments in 2008 and 2007.

An article covering the main findings from a Ministry of Education report containing new detailed figures on the demand for different fields of study is included in chapter 5.

1. Enrolments in courses of less than one week's duration decreased by 64 percent from 2007 to 2008 due to a fall in the provision of occupational health and safety courses.

Analytical tables: An associated set of tables on the learners in tertiary education is available on the Education Counts website, Tables ENR1-40, EFT1-38, PPN1-13, PRG1-15, TTP1-2, STR1-3, ACE1-4, COM1-36, ARN1-18, TTA1-2, ITP1-17, CSC1-10 and ITA1-5.



IN 2008 **502,000** **STUDENTS ENROLLED**

2009 YEAR

Early indications from the Ministry of Education enrolments collection suggest that the average study load of students increased in 2009 and that enrolment numbers have also increased. The economic slowdown that started in 2008 continued to significantly weaken the labour market in 2009. A further weakening of the labour market is expected throughout 2009 and it is likely that this will lift the demand for participation in the tertiary education sector. For example, more young people and the unemployed may seek to undertake tertiary study in order to obtain qualifications that could strengthen their position in the labour market.

The April 2009 tertiary education enrolment statistics show that while the number of enrolments by under-18-year-olds decreased, there was a significant increase in enrolments by 18 to 19 year-olds, suggesting that the 'birth blip' is still completing its move into tertiary education. Early indications also show higher enrolments in 2009 by 20 to 24 year-olds. On the other hand, the early indications for those aged 40 years or over are that enrolments for this group will decline in 2009.

The April 2009 enrolments snapshot also suggests a strengthening of the recovery of New Zealand's position in the international student market after several years of decline. This early indicator shows that there was significant overall growth in the number of international enrolments, with the highest percentage increases taking place in the study of level 5 to 7 diplomas and in doctorates.

In 2009, the government largely maintained funding for the Literacy, Language and Numeracy Action Plan 2008-2010 and this is one of a number of factors which may contribute to demand for non-degree study. Funding for Adult Literacy Educator Grants has been continued in 2009 to build the capability of educators/trainers to teach adult literacy and numeracy by helping them to access and complete qualifications. The literacy and numeracy funding 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. Demand for non-degree study may also come from workers who choose to retrain because of job losses.

A stabilising factor in predicting the pattern of participation in tertiary education is that investment in tertiary education organisations is now on the basis of multi-year plans. This system commenced in 2008 with tertiary providers submitting plans in July 2008 and beginning plan delivery in January 2009. It is focused on creating a differentiated but complementary network of provision. All tertiary education institutions and industry training organisations, and some private training establishments, now have plans that were developed together with the Tertiary Education Commission.

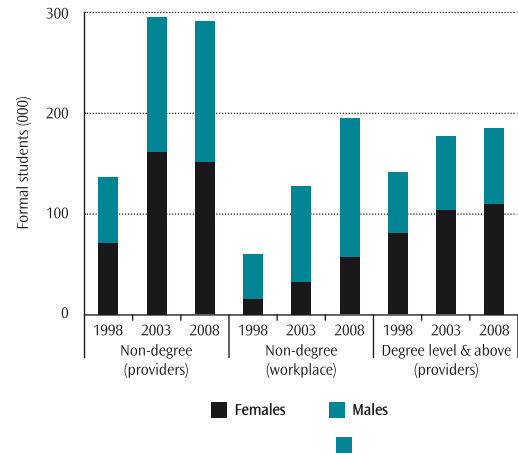
FORMAL STUDENT ENROLMENTS IN 2008²

There were approximately 721,000 students (including international students) in 2008:

Provider-based enrolments of more than 1 week's duration		
Levels 1 to 10	436,000	(down 5.1% on 2007)
Training Opportunities	16,900	(up 3.1% on 2007)
Youth Training	9,680	(down 2.8% on 2007)
Skill Enhancement	489	(down 5.2% on 2007)
Non-government-funded (estimate)	15,000	
Total	478,000	
Workplace-based programmes of more than 1 week's duration		
Industry trainees (excl. modern apprentices)	182,000	(up 4.8% on 2007)
Modern Apprenticeships	12,100	(up 12% on 2007)
Gateway	9,690	(up 18% on 2007)
Total	204,000	
Courses of less than 1 week's duration		
Secondary-Tertiary Alignment Resource	16,800	(up 1.9% on 2007)
Other short courses	22,000	(down 64% on 2007)

In 2008, 55 percent of provider-based enrolments of more than 1 week's duration were made by women. In 1998, the gender split was the same.

Figure 5.1: Formal students by level of study, setting and gender



Source: Ministry of Education and Tertiary Education Commission.

TRENDS IN FORMAL TERTIARY EDUCATION

The number of formally enrolled students fell in 2008. Continuing a downward trend, enrolments at non-degree level fell in 2008 due mainly to a fall in domestic level 1 to 4 certificate enrolments. At degree level and above, enrolments remained stable. Postgraduate enrolments by domestic and international students increased, as did bachelors degree enrolments by domestic students. Bachelors enrolments fell for international students. The rise in domestic enrolments was due to the 'birth blip' continuing to move from school to tertiary education. The decrease in international students was primarily due to a cohort effect – smaller cohorts working through in multi-year qualifications. In contrast, the upward trend in workplace-based enrolments continued in 2008.

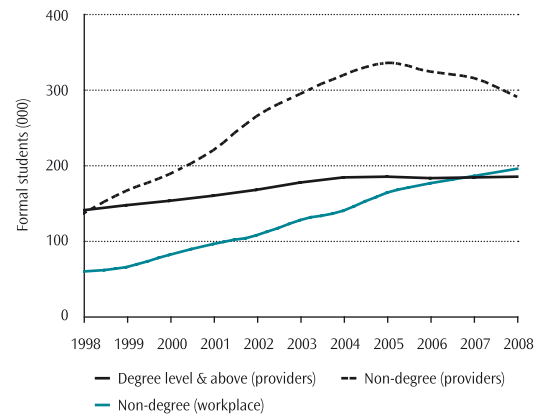
Students in formal study by level and setting in 2008:

Non-degree (provider-based)	290,000 (down 7.9% on 2007)	Participation rate 8.1%
Non-degree (workplace-based)	195,000 (up 4.8% on 2007)	Participation rate 5.8%
Degree or higher	184,000 (up 0.3% on 2007)	Participation rate 4.8%

The participation rate applies to domestic students only.

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

Figure 5.2: Trends in formal students by level of study and setting



Source: Ministry of Education and Tertiary Education Commission.

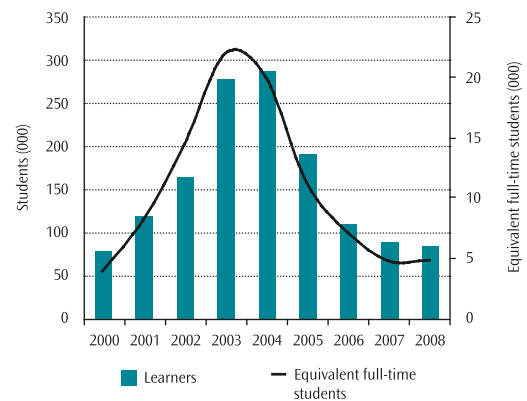
NON-FORMAL STUDENTS

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

The estimated number of students in non-formal tertiary study in 2008:

Adult and community education:		
Tertiary education institutions	83,300	(down 6.0% on 2007)
Schools	140,000	(down 14% on 2007)
Community organisations	Unknown	
Adult literacy and English for Speakers of Other Languages:		
Estimated funded learners	12,000	

Figure 5.3: Non-formal students in tertiary education institutions



2. These highlights refer to students enrolled at any time during the year with a tertiary education provider in formal study (that is, contributing towards a recognised qualification) of more than one week's duration, unless otherwise stated. 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.

PROVIDER-BASED ENROLMENTS BY LEVEL OF STUDY

In 2008, the number of level 1 to 3 certificate enrolments fell for the third consecutive year. The number of level 4 certificate enrolments also fell. A greater focus on higher-quality, higher-relevance qualifications led to these shifts.

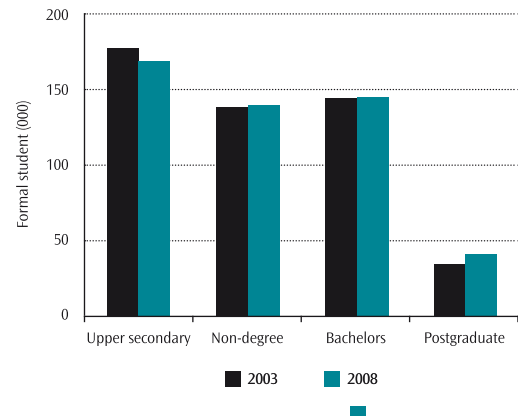
Bachelors-level enrolments remained stable due to a rise in domestic enrolments offsetting lower international enrolments. Enrolments in level 5 to 7 diplomas and postgraduate qualifications increased for both domestic and international students.

The number of provider-based formal enrolments in 2008:

	Domestic		International	
	2008	% change from 2007	2008	% change from 2007
All study levels	421,000	- 5.2	39,800	- 0.1
Certificates 1-3	164,000	-12.1	4,700	- 0.4
Certificates 4	65,200	- 6.8	4,780	+18.2
Diplomas 5-7	63,500	+ 0.4	9,710	+ 4.2
Bachelors	129,000	+ 1.2	17,000	-10.0
Postgraduate	36,000	+ 0.8	6,000	+12.7

Note: In Figure 5.4 'upper secondary' comprises level 1 to 3 certificates and 'non-degree study' comprises level 4 certificates and level 5 to 7 diplomas and certificates.

Figure 5.4: Provider-based formal enrolments by level of study



WORKPLACE-BASED LEARNERS BY LEVEL OF STUDY

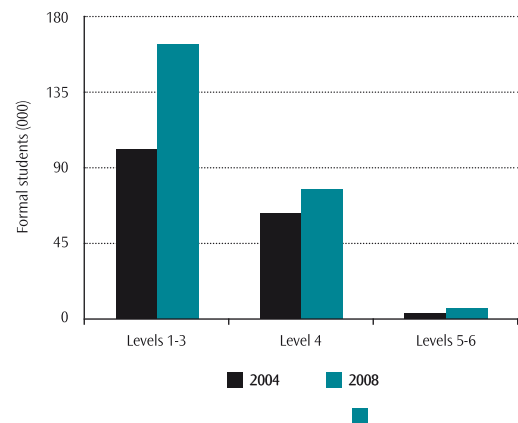
In 2008, the number of industry trainees increased significantly at levels 1 to 3. At levels 4 to 6, the number of trainees fell from 2007 to 2008; however, the number of trainees at level 4 and above was higher in 2008 than in 2004.

The number of industry trainees in 2008 by level of study:

All study levels	195,000	(up 4.8% on 2007)
Levels 1-3	163,000	(up 9.2% on 2007)
Level 4	76,700	(up 3.8% on 2007)
Levels 5-6	6,100	(up 8.0% on 2007)

Source: Tertiary Education Commission.

Figure 5.5: Industry trainees by level of study



PROVIDER-BASED EQUIVALENT FULL-TIME STUDENTS

The amount of study, in terms of provider-based equivalent full-time students, fell overall from 2007 to 2008 by 1.1 percent. There was a continued shift in 2008 from certificate-level to higher-level study. While diploma and bachelors equivalent full-time student units remained stable overall, as a proportion of all tertiary students, the amount of study at these levels rose slightly in 2008.

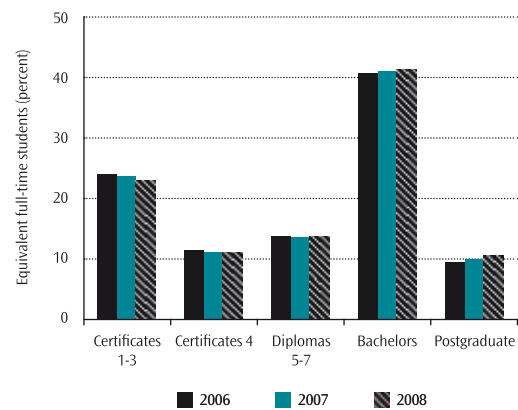
Formal enrolments expressed in equivalent full-time student units by study level in 2008:

	Domestic		International		% of 2008 enrolments*
	2008	% change from 2007	2008	% change from 2007	
All study levels	238,000	-0.9	28,000	- 2.7	10.5
Certificates 1-3	59,000	-4.7	2,460	+11.1	4.0
Certificates 4	27,100	-4.6	2,420	+22.9	8.2
Diplomas 5-7	30,900	-0.3	5,910	+ 2.6	16.0
Bachelors	98,100	+1.7	12,400	-14.7	11.2
Honours	12,600	+2.5	1,600	- 2.7	11.3
Masters	6,150	-0.7	1,330	+10.8	17.8
Doctorates	4,570	+2.7	1,840	+30.4	28.7

* In terms of equivalent full-time student units.

Note: 'Bachelors' includes graduate certificates and diplomas and 'honours' includes postgraduate certificates and diplomas.

Figure 5.6: Distribution of equivalent full-time students by level of study



FORMAL STUDENTS BY PROVIDER TYPE

The fall in equivalent full-time student units in 2008 occurred mainly in the polytechnics due to fewer people studying level 1 to 3 certificates. At universities the number of equivalent full-time student units fell slightly – a decrease in international enrolments at bachelors level was almost offset by more domestic enrolments at bachelors level and increased enrolments by postgraduate students.

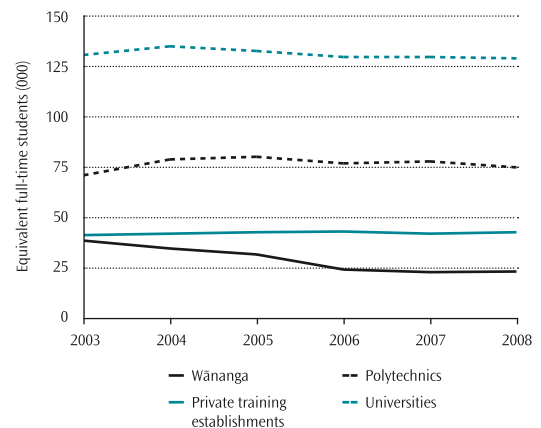
At private training establishments and wānanga the number of equivalent full-time student units increased in 2008.

Students by provider type in 2008 (expressed in equivalent full-time student units):

All formal enrolments	266,000	(down 1.1% on 2007)
Tertiary education institutions	225,000	(down 1.5% on 2007)
Private training establishments	41,700	(up 0.9% on 2007)
Universities	128,000	(down 0.5% on 2007)
Polytechnics	74,000	(down 4.0% on 2007)
Wānanga	22,700	(up 1.7% on 2007)

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

Figure 5.7: Equivalent full-time students by provider type



PARTICIPATION RATES BY ETHNIC GROUP

Participation in tertiary education fell in 2008 for the European, Māori and Asian ethnic groups, while it remained stable for the Pasifika group. Fewer students enrolling in certificate-level courses and a relatively low unemployment rate were contributing factors to the fall in the participation rates. The Māori participation rate has decreased for a number of years but it remains higher than for other ethnic groups. The participation rate for Europeans, before the latest decrease, has been fairly static.

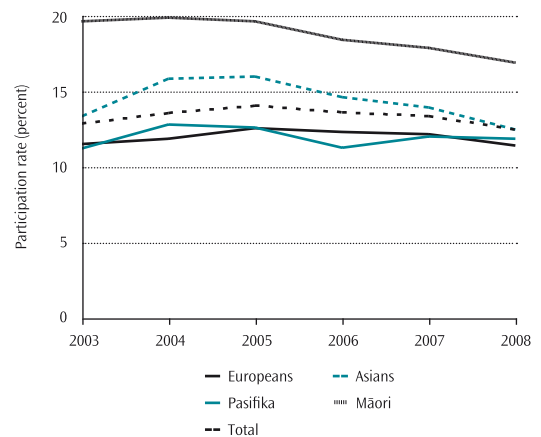
New Zealanders aged 15 years and over in formal study by ethnic group in 2008:

	Industry training %	Provider-based		
		Non-degree %	Degree or higher %	All levels %
Europeans	4.4	7.1	4.6	11.4
Māori	8.0	13.8	3.6	16.9
Pasifika	6.3	8.7	3.5	11.8
Asians	na	6.1	6.9	12.4
Total	5.8	8.1	4.8	12.5

Notes:

- The provider-based participation rates have been age-standardised.
- Students are counted in each ethnic group they affiliated with in the provider-based rates, while a learner is allocated only one ethnic group based on the 'prioritised' method in the workplace-based rates.

Figure 5.8: Participation rates in provider-based tertiary education by ethnic group



INTERNATIONAL STUDENTS

In 2008, enrolments by international students remained almost unchanged at 39,800. However, the amount of study by international students, in terms of equivalent full-time student units, decreased in 2008.

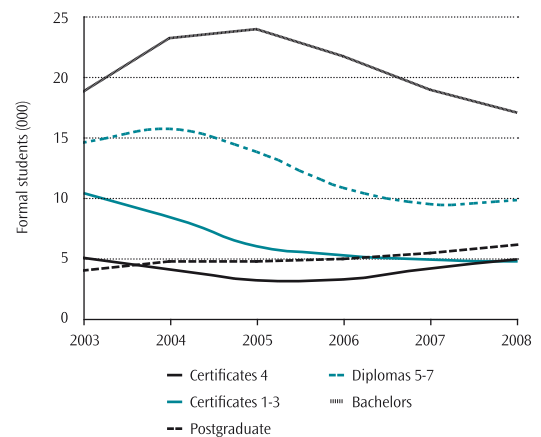
Between 2005 and 2007, international enrolments showed a decreasing trend. This is primarily due to a cohort effect – smaller cohorts working through in multi-year qualifications, especially in bachelors degrees.

Provisional information in 2009 suggests an overall upward trend in international student numbers.

- 8.6% of tertiary education enrolments were made by overseas students (11 percent in terms of equivalent full-time students).
- 66% of the international students were from Asia.
- 29% more international students enrolled in doctoral studies in 2008 than in 2007.

Since 2007, 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 5.9: International students by level of study



COMPLETING A QUALIFICATION

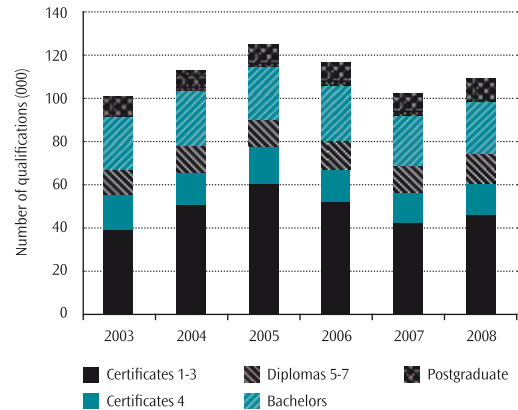
Figure 5.10: Qualifications completed by formal domestic students by level of study

In 2008, 99,800 domestic formal students completed 110,000 qualifications. Due to a change in the way the Ministry collects qualification completions data, a new data series has been developed. The qualification completions data presented for 2008 is therefore not comparable with that published previously.

Formal students who completed a qualification in 2008:

	Domestic	International
Total	99,800	12,200
Certificates 1-3	42,200	1,860
Certificates 4	13,700	1,430
Diplomas 5-7	13,300	3,000
Bachelors degrees	19,600	3,400
Graduate cert./dip.	3,770	677
Honours/postgraduate	7,340	1070
Masters	3,080	818
Doctorates	654	143

Note: Due to the changes made to the collection of completions data in 2007, some private training establishments were not able to supply information. In 2007, the number of students completing a qualification has been adjusted for the missing data returns; however, the total number of qualifications completed in 2007 remains lower (see Figure 5.10).



WORKPLACE-BASED ACHIEVEMENT

Figure 5.11: National certificates completed by level of study

In 2008, the number of national certificates awarded increased by 22 percent to 36,000. In 2007, the number of national certificates completed by industry trainees fell slightly. Before this, national certificate completions had been rising steadily.

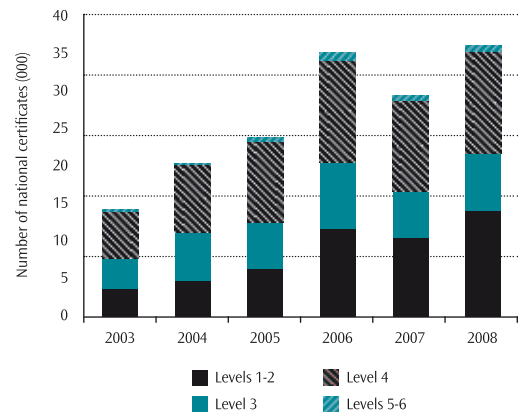
The number of industry trainees who completed national certificates in 2008:

All levels of study	36,000	(up 22% on 2007)
Levels 1-2	14,100	(up 34% on 2007)
Level 3	7,560	(up 24% on 2007)
Level 4	13,600	(up 13% on 2007)
Levels 5-6	701	(up 8.5% on 2007)

Gateway students going on to further study or employment in 2008:

To education	67%	(64% in 2003)
To employment	29%	(30% in 2003)

Source: Tertiary Education Commission.



MORE STUDENTS RETAINED IN STUDY

Figure 5.12: First-year and five-year retention rates for domestic formal students

The five-year retention rates improved at the non-degree level for domestic students who started study in 2003, compared with those who started study in 1998. Over the same period, the five-year retention rates declined slightly for bachelors and honours degrees and for postgraduate certificates and diplomas, while at masters and doctoral levels the retention rates increased.

Five-year retention rates for domestic formal students:

	Starting year 1998	Starting year 2003
All levels of study	51%	53%
Certificates 1-3	47%	56%
Certificates 4	39%	45%
Diplomas 5-7	43%	44%
Bachelors	62%	60%
Honours/postgraduate	64%	58%
Masters	63%	67%
Doctorates	59%	80%

Note: 'Bachelors' includes graduate certificates and diplomas and 'honours' includes postgraduate certificates and diplomas.

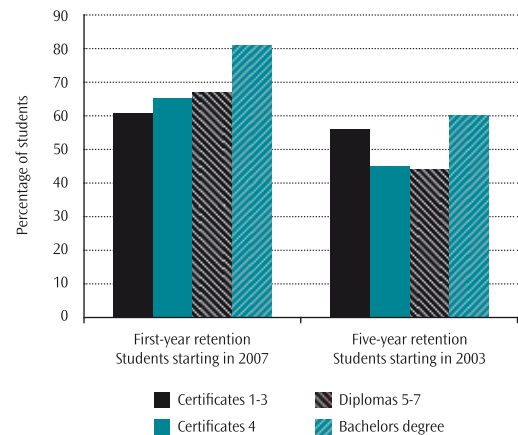


Table 5.1: Estimate of the size of the tertiary education sector by level of study in 2008

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)*	147,000	118,000	128,000	35,400	397,000
International students (excl. industry training and targeted training)*	4,430	13,900	17,000	6,000	39,300
Students in non-government-funded providers	10,000	5,000			15,000
Targeted training programmes					
– Training Opportunities	16,900	–	–	–	16,900
– Youth Training	9,680	–	–	–	9,680
– Skill Enhancement	–	489	–	–	489
Students in qualifications of > 1 week's duration	188,000	137,000	145,000	41,400	478,000
Secondary-Tertiary Alignment Resource < 1 week's duration	16,400	375	45	–	16,800
Other students in qualifications of < 1 week's duration	18,000	3,920	338	11	22,000
Total provider-based students	223,000	141,000	145,000	41,400	517,000
Workplace-based					
– Learners in industry training (excl. Modern Apprenticeships)	121,000	61,400	–	–	182,000
– Learners in Modern Apprenticeships	1,340	10,800	–	–	12,100
– Gateway	9,690	–	–	–	9,690
Total workplace-based learners	132,000	72,200			204,000
Total provider- and workplace-based learners	355,000	213,000	145,000	41,400	721,000
Non-formal students					
ACE** through tertiary education institutions					83,300
International students in non-formal qualifications					5,050
Adult literacy and English as a second or other language (estimated funded learners)					12,000
ACE funded through schools					140,000
ACE through community organisations					Unknown
* Excluding students who undertake industry training and students who are in targeted training programmes.					
** Adult, community and other education not elsewhere classified.					
Student component-funded learners	146,000	117,000	128,000	37,300	398,000

Notes:

1. Provider-based students are counted in each type of programme they enrol in, 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.

Trends in fields of study of bachelors degree graduates

A key focus of the New Zealand tertiary education system over the last decade has been on developing a stronger relationship between the supply of skills and knowledge from the education sector and the demand for these skills from the labour market. Improving our knowledge of what fields tertiary students are studying is a key element of this goal, and the motivation for some recent research undertaken by the Ministry of Education. This article summarises some key findings from this research, which analysed field of study trends for bachelors degree graduates between 2002 and 2006.³

Over 25,800 people gained a bachelors degree in New Zealand in 2006. The Bachelor of Arts, Bachelor of Science, and Bachelor of Commerce degrees remained the three most common bachelors degree qualifications. Over one in three graduates gained one of these degrees. However, qualification names are often not a good indicator of the skills and knowledge gained in particular fields, especially for more general degrees such as Bachelor of Science or Bachelor of Arts. Over a third of the fields studied by science graduates were not in the natural and physical sciences, while over one in 10 arts and commerce graduates specialised in fields outside of society and culture, and management and commerce. In other cases, such as teaching and some of the health professions, the qualification name much more closely reflects the student's field of study.

This article is based on a study which made use of new field of study information that looked beyond qualifications to the courses taken by students as part of their degree. The field of study of courses taken within a qualification for each student were analysed and assigned a specialisation, based on the level and number of these courses. The New Zealand Standard Classification of Education (NZSCED) was used to assign a field of study to each course within a qualification. The NZSCED has three levels of detail, with 12 fields at the highest (or broad) level, 71 at the second (or narrow) level, and over 370 at the lowest (or detailed) level. The new approach taken allows us to go beyond the broad field of 'society and culture' to analyse the trends, for example, in law or economics, or in medical studies or nursing within the broad field of 'health'. The research focused on the narrow classification level with 71 fields and, unless otherwise stated, all trends in this article are at this narrow level. The study counts were rounded to the nearest 10 in view of the methods used to estimate the specialisation for each qualification and the associated data quality issues.

The most common fields of study for degree graduates

Teacher education, business and management, and studies in human society remained the three most common fields of study for domestic bachelors graduates for each year between 2002 and 2006.⁴

Sales and marketing, law and nursing were the next three most common specialisations.

Biological sciences, law, and sales and marketing have become more common over the last five years, while curriculum and education studies and information systems have dropped out of the top 10.

3. Scott, D. (2009) *Trends in fields of study of bachelors degree graduates in New Zealand*. Available on www.educationcounts.govt.nz.

4. Studies in human society includes: history, sociology, geography, anthropology, art history, classics, women's studies, Māori studies and archaeology.

Table 5.2: The 10 most common fields of study for domestic bachelors degree graduates

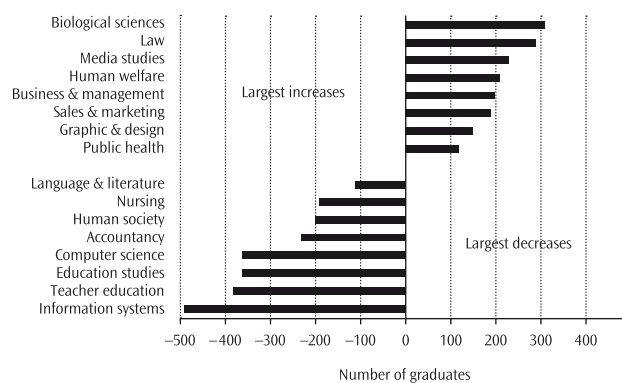
Field of study (NZSCED narrow level)	Ranking					Number of domestic graduates	As a % of all graduates
	2002	2003	2004	2005	2006	2006	2006
Teacher education	1	1	1	1	1	2,100	10.0
Business and management	3	2	2	2	2	1,810	8.6
Studies in human society	2	3	4	3	3	1,550	7.4
Sales and marketing	9	8	7	7	4	1,330	6.3
Law	10	7	5	5	5	1,300	6.2
Nursing	4	4	3	4	6	1,290	6.2
Biological sciences	13	13	12	9	7	1,150	5.5
Language and literature	6	9	6	6	8	1,100	5.3
Behavioural science	11	10	11	10	9	1,000	4.8
Accountancy	8	11	10	12	10	940	4.5
All fields						20,900	

Largest changes between 2002 and 2006

The number of domestic graduates increased in total by 980, or 4.2 percent, from 2002 to 2006. The largest numerical increases over this period were in biological sciences (up by 310 graduates, or 36 percent), law (up 300, or 28 percent), communication and media studies (up 230, or 54 percent), and social work and counselling (up 210, or 92 percent). Other smaller but rapidly growing fields were public health (up 120, or 230 percent), and justice and law enforcement (up 110, or 150 percent). There was also strong growth in biotechnology and pharmacology and this has seen the 'other' sciences field increase by 160 graduates, or 56 percent, since 2002.

The largest decreases have been in information technology (down from 2002 to 2006 by more than 660 graduates, or 40 percent), teacher education (down 380, or 15 percent), education studies (down 360, or 28 percent) and accountancy (down 230, or 20 percent). In contrast to the decline in information technology graduates, there has been a 25 percent increase in the number of graduates in graphic and design studies, much of which has been due to growth in computer-based multimedia and design courses. Despite the decline in education graduates, teacher education remained the most common field of study, while information technology fields dropped out of the top 10.

Figure 5.13: Largest changes in the number of bachelors degree graduates between 2002 and 2006 by narrow field of study



Note: Includes largest gains and losses only. A further 50 fields are not shown. Graph relates to domestic students only.

Society and culture

Society and culture covers the most diverse range of subjects of all the broad NZSCED fields – with 12 narrow fields, and 58 distinct detailed fields. More New Zealanders graduate with a bachelors degree in subjects related to society and culture than any other broad field of study – one in three domestic graduates, or 6,700, in 2006.

The humanities and social sciences subjects (or ‘studies in human society’) remained the largest narrow field within the broad field of society and culture. Numbers in this field have been stable since 2003, with around 1,550 graduates a year. Within this narrow field, history remains the largest detailed field, with 470 to 500 graduates a year. Sociology increased in 2005 and 2006, while anthropology has been declining. Degrees in human welfare studies and services have also increased noticeably since 2002, up by 210 graduates, or 92 percent. Three-quarters of these are in social work, while 30 percent are in counselling.

Law had 1,300 graduates in 2006, or 290 more than in 2002, the second-largest increase after biological sciences. Justice and law enforcement also increased significantly, up by 100 graduates, or 150 percent. There were 1,100 graduates in language and literature in 2006, down slightly from 2002. Degrees in literature made up half of this group, while foreign languages made up a third.

Economics graduate numbers have risen by 20 percent since 2002. Behavioural science (or psychology) has been steady at approximately 1,000 graduates a year.

Sciences

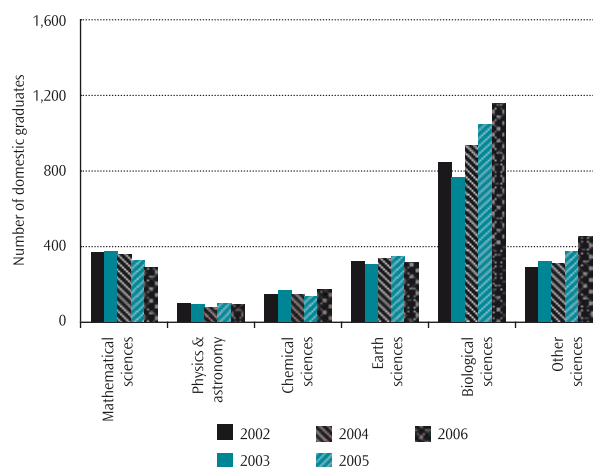
The number of science graduates showed moderate growth from 2002 to 2006 – up by 300 graduates, or 16 percent. This broad field made up 10 percent of bachelors graduates in 2006.

The largest gains were in biological sciences (up 300 graduates, or 36 percent). Specifically, the gains in the number of graduates were in human biology (up 110, or 76 percent), ecology and evolution (up 70, or 37 percent) and neuroscience (up 60, or 130 percent). Biochemistry and botany graduate numbers remained relatively constant, while zoology numbers fell since 2002. In most cases, graduates in biological sciences were not associated with other specialisations in other broad fields, such as health.

There were also large gains in the ‘other’ sciences group (up 160 graduates, or 56 percent). The main contributors were pharmacology (up 70, or 94 percent) and biotechnology (up 40, or 75 percent).

Mathematical sciences graduate numbers decreased by 80, or 22 percent, from 2002 to 2006.

Figure 5.14: Domestic bachelors degree graduates in natural and physical sciences



Engineering

Engineering graduate numbers were stable between 2002 and 2005, but increased by 19 percent in 2006, with growth spread over a number of engineering disciplines. The largest group – electrical and electronic – rose in number up to 2005, before falling in 2006. The largest falls in this narrow field were in computer engineering. The number of mechanical and industrial graduates also increased up to 2005 before falling in 2006, specifically in industrial engineering. Mechanical engineering graduates increased in number each year between 2002 and 2006 – up 60 graduates, or 46 percent, on 2002. After steady gains since 2002, the number of manufacturing engineering graduates fell sharply in 2006 – by 70 percent – back down to the 2002 level. Process and resources (which includes chemical engineering), civil, geomatic (which includes surveying) and aerospace engineering have largely remained at their 2002 levels. The first 30 students in mining engineering graduated in 2006.

Health

Health graduate numbers were relatively constant from 2003 to 2006. At around 3,180 a year they made up approximately 15 percent of all domestic students gaining bachelors degrees. Nursing degrees dominated this group. Over 40 percent of all health degrees were in nursing. The number of nursing graduates decreased from 2002 to 2006 by nearly 200, or 13 percent. Most of this decrease was between 2005 and 2006. The number of medical studies graduates remained relatively constant at 420 to 450 a year, while dental studies (specifically the allied dental professions) and pharmacy grew steadily (up 60 percent from 2002 to 2006).

Dental studies graduates increased from 60 in 2002 to just over 100 in 2006. This increase was driven by increases in the allied dental professions, for example, dental hygiene, and at least in part by a change that has seen full-degree programmes rather than diploma programmes become the main means of training for these professions. Graduate numbers in dentistry (which has capped intakes) remained relatively constant at around 60 a year.

Veterinary graduates rose in number by 34 percent from 2005 to 2006, to 120, after being at 70 to 80 per year from 2002 to 2005. This comprised some 90 graduates in veterinary science and 30 graduates in veterinary assisting. The country's only degree in veterinary science, from Massey University, has a capped intake. The year 2005 saw the first bachelors graduates in veterinary assisting (from Unitec's Bachelor of Applied Animal Technology).

Other fields

The number of graduates in management and commerce increased from 2002 to 2006 by 9.5 percent, even though accountancy graduates, over this period, declined in number by 20 percent. The number of business management graduates rose steadily from 2002 to 2006 – up 12 percent to 1,810, with main gains in hospitality, farm, and organisation management, and international business. The number of marketing graduates rose noticeably from 2002 to 2006, up 120 graduates, or 13 percent, to more than 1,060 for the first time.

Creative arts graduates have been increasing rapidly in number and exceeded the number of science graduates in 2006. This was largely due to growth in journalism and media studies from 2002 to 2006 (up 230, or 54 percent) and graphic and design studies, particularly computer-based design fields, which increased by 150 graduates, or 25 percent. Graphic and design studies continued to have the largest number of graduates in the broad field of creative arts, with 780 domestic graduates per year.

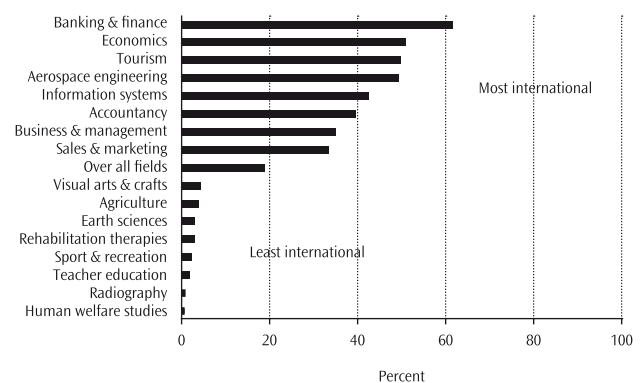
Teacher education is the most vocationally focused group of the broad fields of study. Nearly 80 percent, or 2,100, of the 2,720 graduates were in teacher education. Graduate numbers, both in teacher education and in curriculum and education studies, have declined since 2002. Teacher education was down 380, or 28 percent, with information technology graduates being the only group whose number went down more. Much of the decline was between 2002 and 2003, with a drop again in 2005 and a slight picking up between 2005 and 2006. Over the period of the analysis, two of the then four colleges of education merged with their local university, while the remaining two followed in 2007. Reported enrolments and graduations showed small to moderate declines around the time of the mergers.

Graduates in information technology declined rapidly in number since 2002, with 660, or 40 percent, fewer domestic graduates in 2006, when they made up 5.0 percent of all domestic graduates. This compared to 9.6 percent five years earlier. Information technology was the only field in 2006 that had a decline in the number of international graduates, following rapid growth from 2002 to 2005. While the number of graduates in information technology has reduced, information technology-related courses in other fields have grown, for example, computer-based multimedia and design courses.

International

The New Zealand tertiary education system is also a supplier of skills for the international labour market as it has one of the highest rates of participation by international students in the Organisation for Economic Co-operation and Development. In 2006, nearly one in five bachelors graduates was an international student. The choice of what to study for international students can be influenced by different factors from those influencing domestic students. Most international students will leave New Zealand after study, so they may seek fields of study which provide skills and credentials that can be readily transferred and will be recognised outside New Zealand. As international students face significant extra tuition costs compared with domestic students, the choice of what to study is more likely to be influenced by future economic returns, that is, which degrees will earn most. English language content is also likely to be a factor for some non-native English language speakers. Consequently, there are marked differences in the fields studied by domestic and international students.

Figure 5.15: Narrow fields of study with the highest and lowest proportion of international students



Note: Includes only those fields with the highest and lowest proportion of international graduates. A further 50 fields are not shown. Over all fields, 19 percent of graduates in 2006 were international.

Figure 5.15 shows those fields of study with the highest and lowest proportion of international graduates. If we also include economics, then six of the top eight fields of study taken by international students were in management and commerce, while the fifth and the ninth fields (not shown) were in information technology. Banking and finance, and economics were the most common specialisations for international graduates. In fact, international graduates outnumbered domestic graduates in these fields. One in 10 international students graduated with economics as their speciality in 2006.

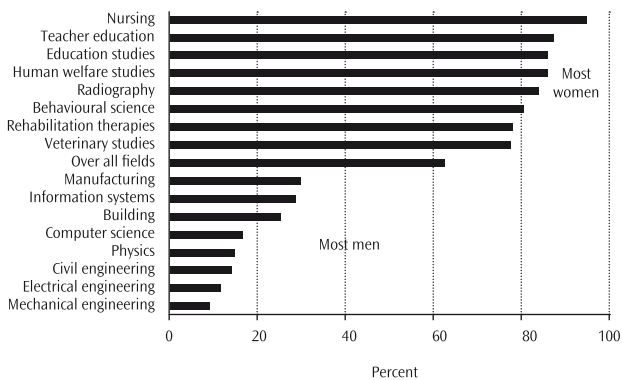
Relatively few international bachelors graduates studied teacher education – just 1.2 percent of all teacher education graduates in 2006. There were also fewer international graduates in health. Only 7.0 percent of all health graduates were international graduates in 2006, compared to 19 percent of all graduates. Health graduates were more likely to specialise in nursing, rather than in fields such as medicine, dentistry, veterinary sciences, and pharmacy, which, in general, have limits on the numbers of new entrants each year, including those from overseas.

Men and women

Historically, there have been differences between what men and women study. More men than women graduate in engineering and information technology, while more women graduate in health and education. Figure 5.16 shows the fields of study with the highest and lowest proportion of female graduates. Again, we see health and education preferences among females against the engineering and information technology preferences among males.

The two traditionally female-dominated professions of teacher education and nursing remained the most common fields for women. One in five female bachelors graduates was in nursing or teacher education. In contrast, the most common fields for male graduates were business and management, and sales and marketing with one in five specialising in these two fields. Fields in information technology were the fifth most common specialisation for men, while this ranked 38th for women. Despite these differences, in each of the top four fields for male graduates in 2006, the number of women exceeded the number of men.

Figure 5.16: Narrow fields with the highest and lowest proportion of bachelors degree graduates



Note: Includes only those 16 fields with the highest and lowest proportion of female graduates. A further 50 fields are not shown. Over all fields, 63 percent of graduates in 2006 were women.

The proportion of domestic bachelors graduates who were female, at 62 percent, remained stable from 2002 to 2006. However, there have been changes within certain specialisations. Women increased their share of graduates in dental studies, agriculture, and justice and law enforcement, while their share of graduates decreased in most engineering disciplines, information technology, tourism, and the performing arts. There were two fields where females increased their share of graduates from 2002 to 2006 to over 50 percent. In agriculture women made up 51 percent of graduates in 2006, compared to 32 percent in 2002, and in dental studies (which includes both dentistry and allied dental professions) women made up 62 percent of graduates in 2006, compared to 35 percent in 2002.

University and non-university degrees

Students gained bachelors degrees at over 40 tertiary education providers, including 14 private training establishments. However, 83 percent of graduates were from the eight universities. While institutes of technology and polytechnics produced 15 percent of all degree graduates, their share was higher than this in the broad fields of health, creative arts, information technology, and architecture and building. Three-quarters of nursing graduates were from polytechnics. Nearly half of graduates in social work and counselling were from polytechnics, and approximately 40 percent of graduates in graphic arts and design, and visual arts and crafts were from polytechnics. Around 740 students (or 2.8 percent) gained a bachelors degree from a wānanga or private training establishment.