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# Chapter 9: Students in bachelors and postgraduate provider-based qualifications

There was an increase in the number of students enrolled in bachelors-level and higher study in 2007, compared with a drop in enrolments in 2006. While numbers in bachelors and masters-level study decreased in 2007, there was a significant increase in honours and doctoral students. There has been a continuing decrease in international students, from an all-time high in 2005. In comparison, domestic student numbers remained relatively unchanged in 2006, and increased in 2007 at bachelors, postgraduate and doctoral levels while remaining stable at masters level.

Universities continued to dominate bachelors-level and higher provision in 2007, with four in every five students at those levels studying at a university. All provider types experienced an increase in the number of students in 2007. The smallest percentage increase occurred in polytechnics, while the largest percentage increase occurred in enrolments in private training establishments. There was an increase in domestic students aged 25 years and over enrolled in bachelors-level and higher study in 2007, following a couple of years of declining enrolments, while the number of domestic students aged under 25 years continued to rise.

The number of students completing a bachelors-level or higher qualification increased slightly in 2006. This was due in part to an increase in the five-year completion rate for those domestic students who started study in 2002. Level 8 qualifications experienced the largest increase in domestic students completing qualifications. The five-year completion rates for bachelors-level or higher qualifications were highest for European and Asian domestic students in 2006.

The report looked at people born in 1978 and followed their participation pattern in tertiary education until 2007 when this cohort turned 29.

## 2008 year

Early indications suggest that 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 under-18-year-olds saw the greatest decrease in enrolments between 2007 and 2008 of any age group. This trend is consistent with the 'baby blip' that has begun to move into tertiary education and is predicted to peak in 2007 and 2008: perhaps the decrease in the number of under-18-year-olds suggests that the 'tail end' of the 'blip' has already moved through.

Early indications also suggest that growth in doctoral student numbers will continue into 2008. Increases in the Performance-Based Research Fund and the 2006 policy change to treat international doctoral students as domestic are likely to continue to exert a positive influence on enrolments at this qualification level.

Bachelors-level and higher qualifications are largely theoretically based qualifications that make up four levels of the New Zealand Register of Quality Assured Qualifications. Level 7 is made up of bachelors degrees, graduate certificates and diplomas, and certificates of proficiency. Level 8 qualifications comprise postgraduate certificates and diplomas, and bachelors degrees with honours. Level 9 qualifications are masters degrees. Level 10 qualifications are doctoral degrees, including doctor of philosophy, professional doctorates and higher doctorates.

## STUDY AT BACHELORS LEVEL AND HIGHER

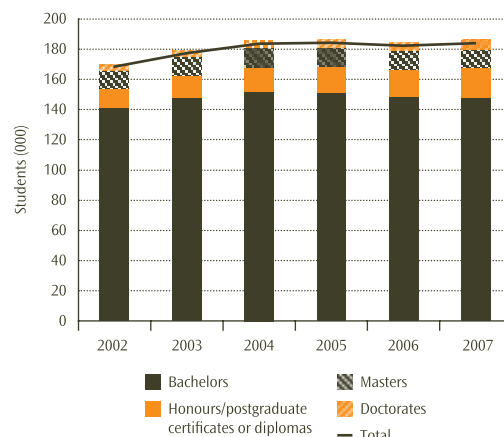
The number of students enrolled in bachelors-level and higher study increased slightly between 2006 and 2007. This was driven by large increases both in certificate and diploma study at honours/postgraduate level and in doctoral study. Largely offsetting these increases was a slight decline in the number of students studying at bachelors and masters levels.

### Students enrolled in bachelors-level and higher study in 2007:

Total	184,000	(up 0.9% on 2006)
Bachelors	148,000	(down 1.0% on 2006)
Honours/postgraduate certificates/diplomas	20,200	(up 14% on 2006)
Masters	12,300	(down 0.5% on 2006)
Doctorates	6,170	(up 13% on 2006)

Expressed as equivalent full-time students, enrolments at bachelors level and higher totalled 138,000 in 2007 (up 1.1 percent on 2006).

Figure 9.1: Participation in bachelors-level and higher study



## DOMESTIC/INTERNATIONAL

The number of domestic students increased between 2006 and 2007. The number and proportion of international students enrolled at bachelors level and higher continued to decrease in 2007.

### Students enrolled in bachelors-level and higher study in 2007:

#### Domestic

Total enrolments	160,000	(up 2.5% on 2006)
Participation rate <sup>1</sup>	4.8%	(4.7% in 2006)
Expressed as equivalent full-time students	119,000	(up 3.7% on 2006)

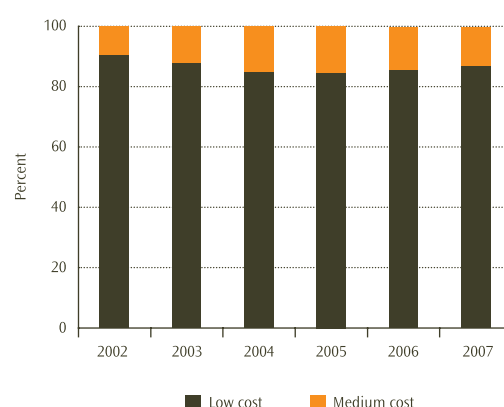
36% of all domestic students were enrolled in bachelors-level or higher study.

#### International

Total enrolments	24,000	(down 8.7% on 2006)
Expressed as equivalent full-time students	18,800	(down 12% on 2006)

Thirteen percent of all bachelors-level and higher students were international.

Figure 9.2: Distribution of domestic and international bachelors-level and higher students



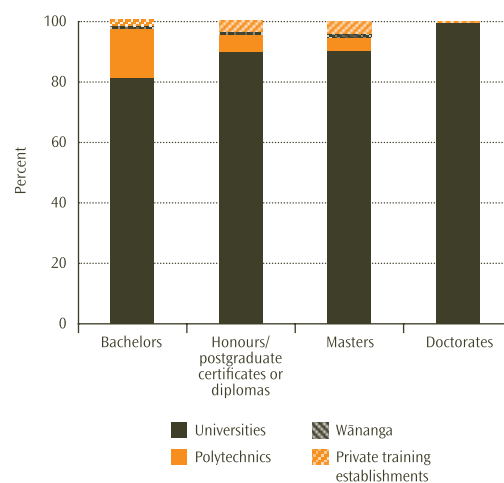
## TYPE OF PROVIDER

Universities continued to dominate the provision of bachelors-level and higher study, with 84 percent of domestic students studying at this level in universities in 2007. Students enrolled in higher-level qualifications such as doctorates and masters were more likely to be studying at a university.

### Domestic students enrolled in bachelors-level and higher study in 2007:

Tertiary education institutions	157,000	(up 2.4% on 2006)
Private training establishments	3,390	(up 17% on 2006)
Universities	133,000	(up 2.4% on 2006)
Polytechnics	22,400	(up 0.5% on 2006)
Wānanga	1,730	(up 8.1% on 2006)

Figure 9.3: Distribution of domestic bachelors-level and higher students by type of provider



1. The participation rate is the percentage of New Zealanders aged 15 years and over enrolled at this level.

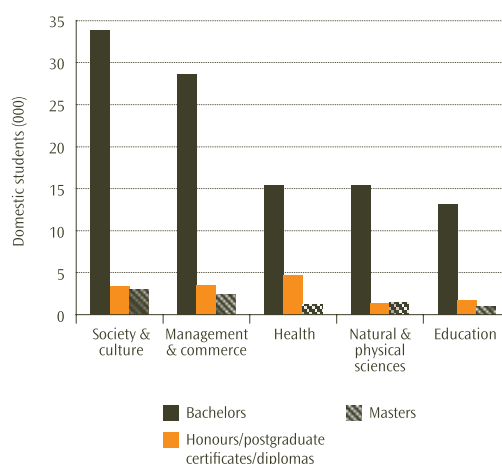
**FIELD OF STUDY**

**9.4: Top five fields of study for domestic bachelors-level and higher students**

The most common fields of study for domestic students enrolled in bachelors-level and higher study in 2007 continued to be society and culture, and management and commerce. Other fields of study that drew large numbers of enrolments were health, science, and education. Together these five fields constituted 80 percent of all domestic enrolments.

**Domestic students enrolled in bachelors-level and higher study in 2007:**

Society and culture	40,100	(up 1.2% on 2006)
Management and commerce	34,000	(down 0.6% on 2006)
Health	21,300	(up 4.4% on 2006)
Natural and physical sciences	17,400	(up 1.0% on 2006)
Education	15,800	(up 3.7% on 2006)



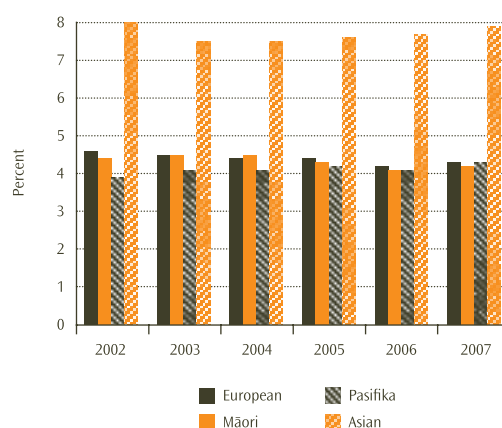
**ETHNIC GROUP**

**9.5: Participation rates in domestic bachelors-level and higher study by ethnic group**

While European students make up two-thirds of all domestic students enrolled in bachelors-level and higher study, the participation rate for European students is very similar to that for Māori and Pasifika students. The participation rate for Asian students at this level of study, at 7.9 percent, is nearly twice that of other ethnic groups.

**Domestic students enrolled in bachelors-level and higher study in 2007:**

European	110,400	(up 1.7% on 2006)
Māori	17,400	(up 2.7% on 2006)
Pasifika	8,470	(up 7.9% on 2006)
Asian	26,700	(up 7.7% on 2006)
Other	9,600	(up 7.1% on 2006)



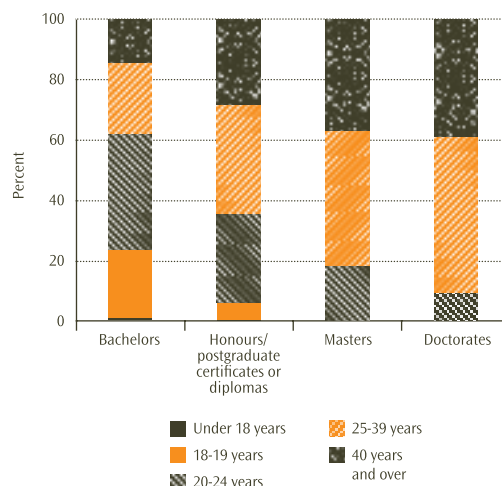
**AGE AND GENDER**

**Figure 9.6: Distribution of domestic bachelors-level and higher students by age group**

The number of domestic students aged under 25 years enrolled in bachelors-level and higher study increased between 2003 and 2007, while the number of older students has decreased. In 2007, students aged under 25 years made up 55 percent of all domestic students, up from 51 percent in 2003. Female students made up 61 percent of all domestic students enrolled in bachelors-level and higher study.

**Domestic students enrolled in bachelors-level and higher study in 2007:**

Under 18 years	1,200	(up 2.0% on 2006)
18-19 years	30,200	(up 7.1% on 2006)
20-24 years	56,100	(up 2.9% on 2006)
25-39 years	43,300	(no change from 2006)
40 years and over	28,700	(up 1.2% on 2006)
Female	96,800	(up 2.9% on 2006)
Male	62,700	(up 2.0% on 2006)



## COMPLETION OF QUALIFICATIONS

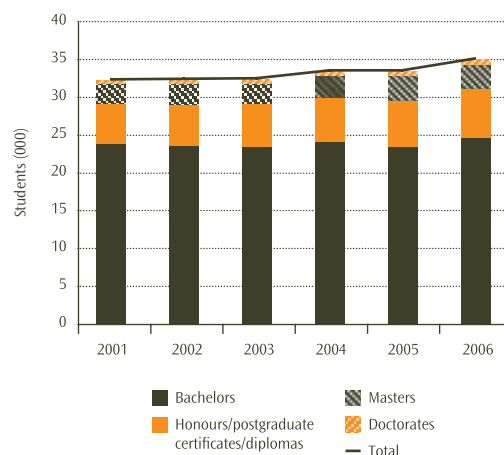
Figure 9.7: Domestic students completing bachelors-level and higher qualifications

While more domestic students completed a bachelors-level and higher qualification in 2006, this increase was largely influenced by a 5 percent increase in students completing bachelors-level qualifications.

### Domestic students completing a bachelors-level or higher qualification in 2006:

Total	35,000	(up 4.8% on 2005)
Bachelors	24,600	(up 5.0% on 2005)
Honours/postgraduate certificates/diplomas	6,580	(up 6.9% on 2005)
Masters	3,240	(up 0.3% on 2005)
Doctorates	570	(down 1.4% on 2005)

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



## FIRST-YEAR RETENTION

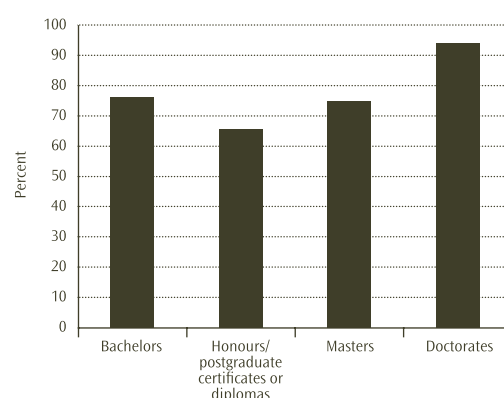
Figure 9.8: First-year retention rates in bachelors-level and higher study

First-year retention rates decreased across all bachelors-level and higher qualifications in 2006, except for masters, which increased by two percentage points.

### Domestic students who started study in 2005 and had either completed a qualification or continued studying in 2006:

Total	76%	(78% in 2005)
Bachelors	76%	(78% in 2005)
Honours/postgraduate certificates/diplomas	66%	(68% in 2005)
Masters	75%	(73% in 2005)
Doctorates	94%	(96% in 2005)

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



## COURSE PASS RATES

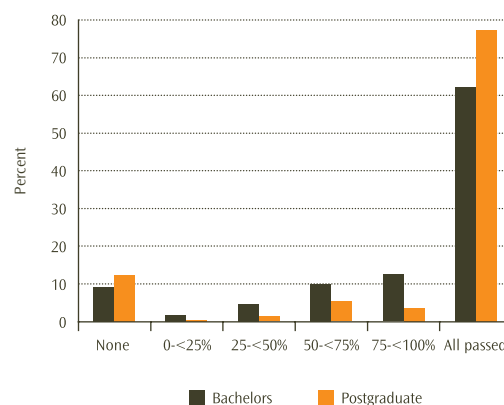
Figure 9.9: Percentage of courses that are passed – for courses started in 2006

Course pass rates were higher at higher academic levels. Domestic students passed 82 percent of courses at bachelors level and 85 percent of courses at postgraduate level. Course pass rates did not change much between 2001 and 2006. Course pass rates were higher for domestic European students than for the other ethnic groups.

### Percentage of bachelors-level courses passed by domestic students in 2006:

Total	83%	(82% in 2005)
European	85%	(85% in 2005)
Māori	74%	(73% in 2005)
Pasifika	66%	(65% in 2005)
Asian	81%	(81% in 2005)
Other	78%	(78% in 2005)

**Note:** Due to a change in the Ministry of Education's data collection the course pass rates to 2007 are not yet available.



### FIVE-YEAR COMPLETION AND RETENTION

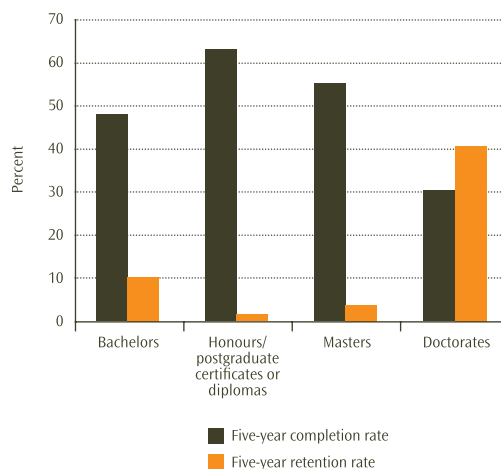
Figure 9.10: Five-year completion and retention rates in bachelors-level and higher study

Domestic students studying at doctorate level were the least likely to complete a qualification within five years. However, five-year retention rates for doctorate students are higher than those of other domestic bachelors-level and higher students. This reflects the fact that doctorate students take longer to complete their qualification.

#### Domestic students who started study in 2002 and had completed a qualification by 2006:

Total	51%	(50% in 2005)
Bachelors	48%	(47% in 2005)
Honours/postgraduate certificates/diplomas	64%	(63% in 2005)
Masters	55%	(54% in 2005)
Doctorates	30%	(28% in 2005)

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



### FIVE-YEAR RETENTION

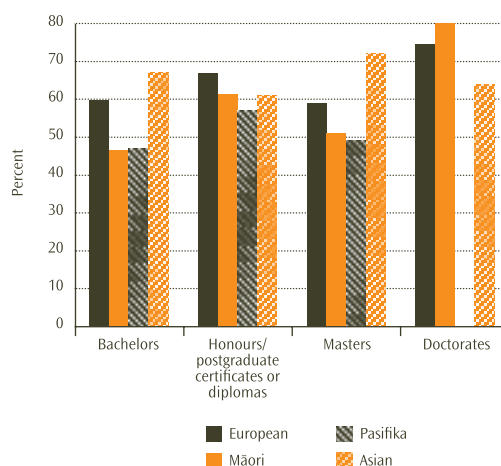
Figure 9.11: Five-year retention rates in bachelors-level and higher study by ethnic group

The five-year retention rates, which overall remained around 60 percent in 2006, were highest for domestic European and Asian students.

#### Domestic students who started study in 2002 and had either completed or continued studying in 2006:

Total	61%	(60% in 2005)
European	62%	(61% in 2005)
Māori	49%	(48% in 2005)
Pasifika	47%	(48% in 2005)
Asian	69%	(68% in 2005)
Other	60%	(58% in 2005)

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



### PROGRESSION TO HIGHER-LEVEL STUDY

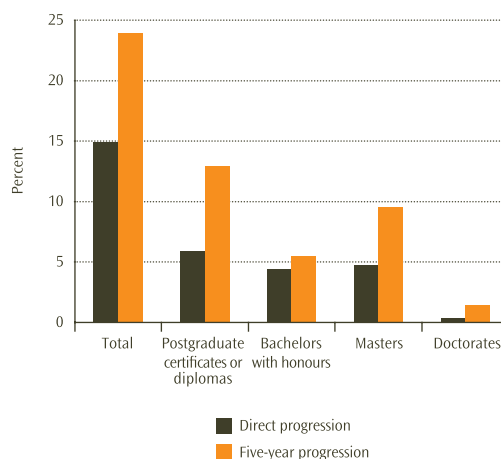
Figure 9.12: Higher progression rates for domestic students who completed a bachelors degree in 2002

Almost a quarter of all domestic students who completed a bachelors degree in 2002 progressed to further study at a higher level by 2007. Half of all these progressed to postgraduate certificate or diploma study.

#### Domestic students completing a bachelors degree in 2002 who progressed to postgraduate study by 2007:

Total	24%	(24% in 2006)
Postgraduate certificates/diplomas	13%	(12% in 2006)
Bachelors with honours	5.5%	(5.0% in 2006)
Masters	9.5%	(8.8% in 2006)
Doctorates	1.4%	(1.4% in 2006)

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

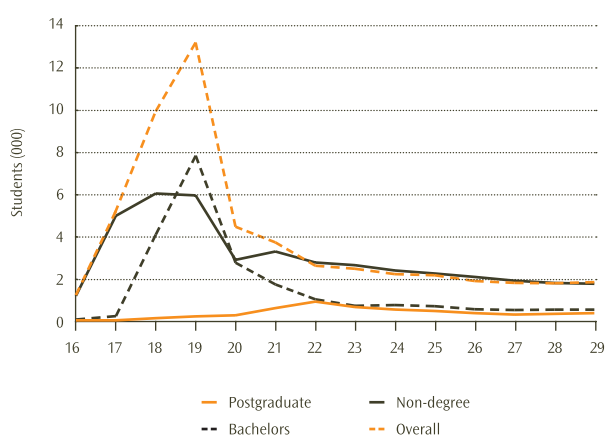


## People in tertiary education over time: the cumulative cohort participation rate

In 2007, the Ministry of Education released a report that examined the participation of birth cohorts in tertiary education. This report introduced the cumulative cohort participation rate – the proportion of an age cohort that participated in tertiary education by any given age. An update of the cumulative cohort participation rate is timely for two reasons. Firstly, two additional years of tertiary education enrolment data is now available allowing us to extend out the cumulative cohort participation rate. That means, for people born in 1978, we can now look at their participation pattern in tertiary education until the age of 29 years. Secondly, in 2007 the Ministry of Education undertook a major review of the methods it uses to link the records of tertiary education students across time and across providers.<sup>2</sup> The review led to a measurable improvement in the quality of the linking and therefore the ability to identify when people first enrolled in tertiary education. The result of this review has altered the cumulative cohort participation rates that were previously published by the Ministry of Education (Ussher, 2007a).

Figure 9.13 shows the number of people born in 1978 by the age at which they first participated in tertiary education.<sup>3</sup> The age at which people were most likely to participate in tertiary education for the first time was 19 years. This was the age at which first-time participation in non-degree and bachelors-level study reached a peak, while, for postgraduate study, people were more likely to participate for the first time at 22 years of age. The sharp decline after the age of 19 years shows that most people participate in tertiary education before the age of 20 years. This trend is very similar for younger birth cohorts.

**Figure 9.13: First-time students by age and level of qualification, 1978 birth cohort**



2. For further information on this matching review process see Scott (2007).  
 3. In this article, students who participated in tertiary education refers to those students enrolled at any time during the year with a tertiary education provider in a programme of study that is more than one week full-time. Learners participating in industry training are not included.

Table 9.1 lists the cumulative cohort participation rates for four birth cohorts – those born in 1978, 1980, 1982 and 1984. By the age of 23 years around 68 percent of a birth cohort had participated in some level of tertiary education. The slowing of the rate of increase of the cumulative cohort participation rate after the age of 19 years further emphasised that most people participate in tertiary education by this age.

### How the participation rate was determined

By knowing the age at which people first participate in tertiary education, we can calculate the cumulative participation rate for a birth cohort – that is, the proportion of the population born in a given year that participated in tertiary education by any given age.

Using unit-record data we are able to determine accurately when each person first participated in tertiary education back to 1994. However, data and definition issues make the calculation of a cumulative participation rate for a birth cohort complex.

For the purposes of calculating the cumulative cohort participation rate, a cohort at age x includes all those people born in the same year who were:

- a New Zealand permanent resident (born in New Zealand or overseas) at age x
- a permanent resident who had emigrated from New Zealand between the ages of 16 and x, or
- a permanent resident who had died between the ages of 16 and x.

This is the total number of people who lived in New Zealand for a period of time between the ages of 16 and x, and who therefore potentially had the opportunity to participate in tertiary education in New Zealand.

For a full explanation of the data and methodology used and the associated quality issues refer to Appendix A in Ussher (2007a). The population statistics in this article were sourced from Statistics New Zealand.

Note: The estimated resident population includes all residents present in New Zealand and counted by the census (the 'usually resident' population count), residents who are temporarily overseas (who are not included in the census), and an adjustment for residents missed or counted more than once by the census (the net undercount). Visitors from overseas are excluded.

There are some differences in the cumulative cohort participation rate between the four birth cohorts. In particular, there is higher first-time participation of 16 to 21 year-olds in the younger birth cohorts of 1982 and 1984. This is as a result of the rise in participation (mainly in non-degree study) that occurred from 1999 when the people in the 1982 birth cohort turned 17 years. What is of interest, though, is that by the age of 23 years the cumulative cohort participation rates for the four

cohorts are very similar. This suggests that increasing the number of younger people participating in tertiary education does not necessarily result in a more highly educated population in the long term. It should be noted, however, that this trend to higher first-time participation at a younger age in the 1982 and 1984 birth cohorts was a result of increases in non-degree study. Increases at bachelors level could result in very different outcomes.

**Table 9.1: Cumulative cohort participation rates**

Age in years	1978 birth cohort	1980 birth cohort	1982 birth cohort	1984 birth cohort
	Percentage			
16	2	1	1	6
17	12	7	12	18
18	29	25	35	39
19	52	53	60	61
20	58	61	66	66
21	63	65	68	68
22	66	67	68	68
23	68	67	69	68
24	68	66	69	–
25	68	66	69	–
26	67	66	–	–
27	67	66	–	–
28	67	–	–	–
29	67	–	–	–

**Note:** At around the age of 25 years, the cumulative cohort participation rates begin to decline slightly due to the effect of migration.

At around the age of 25 years, the cumulative cohort participation rates begin to decline slightly and this is due to the effect of migration. It is likely that a high proportion of immigrants, especially at the older ages, participated in an overseas tertiary education system. This is unable to be reflected in the cumulative cohort participation rate as it only counts those people who have participated in the New Zealand tertiary education system.

However, to give some context to this issue, Newell and Perry (2006) found, using census data, that New Zealand residents who were born overseas were more highly educated than residents born in New Zealand. This perhaps reflects the fact that new permanent resident migrants are subject to skills and education selection criteria. There is no doubt that if this was able to be factored into the cumulative cohort participation rate then it would continue to increase between the ages of 25 and 29 years.

### Level of qualification

By the age of 29 years, 52 percent of the 1978 birth cohort had participated in non-degree study, compared to 27 percent in bachelors-level study and 6 percent in postgraduate study.<sup>4</sup> Unlike the non-degree and postgraduate rates, the cumulative cohort participation rate for bachelors level becomes very flat from the age of 20 years. This suggests that while the vast majority of people first participate in bachelors-level study at young ages, there is a group of people who enter the tertiary education system at non-degree level at older ages. This result is consistent with the rise in participation in non-degree study that occurred from 1999. Further emphasising the effect of that rise in participation is the fact that 45 percent of the 1982 birth cohort had participated in non-degree study by the end of 2002 – when they turned 20 years of age.

4. Students who have participated in more than one level of tertiary study have been counted in each level. Consequently, the sum of the rates in each level may not add to the total rates.

Table 9.2: Cumulative cohort participation rates by level of qualification

Age in years	Non-degree	Bachelors	Postgraduate
	Percentage of the 1978 birth cohort		
16	2	0	0
17	11	0	0
18	22	8	0
19	32	21	1
20	36	26	1
21	41	28	2
22	44	29	4
23	47	29	4
24	49	29	5
25	49	28	6
26	50	28	6
27	51	27	6
28	51	27	6
29	52	27	6

*Note:* At around the age of 25 years, the cumulative cohort participation rates begin to decline slightly due to the effect of migration.

## Gender

At all levels of tertiary study, the cumulative cohort participation rates of men and women were very similar. However, in bachelors-level study, the cumulative cohort participation rate was higher for women than for men. By the age of 19 years, 25 percent of women from the 1978 birth cohort had participated in bachelors-level study, compared to 18 percent of men. What is interesting though

is that this difference of 7 percentage points at the age of 19 years remained when the birth cohort had reached 29 years of age.

This would suggest that women first participate in bachelors-level study in larger numbers than men up until the age of 19 years, but after this age men and women enter at similar levels. The gender disparity that exists in bachelors-level study at present can therefore be mainly attributed to participation rates of 16 to 19 year-olds.

Table 9.3: Cumulative cohort participation rates by gender

Age in years	Females	Males	Females – bachelors level	Males – bachelors level
	Percentage of the 1978 birth cohort			
16	2	3	0	0
17	11	13	1	0
18	29	30	9	6
19	52	51	25	18
20	59	58	29	22
21	63	63	31	24
22	65	66	32	25
23	67	68	32	26
24	68	68	32	25
25	68	68	32	25
26	67	68	31	25
27	67	68	31	24
28	67	68	30	24
29	67	68	30	24

*Note:* At around the age of 25 years, the cumulative cohort participation rates begin to decline slightly due to the effect of migration.

## Future work

The cumulative cohort participation rate provides interesting insights into the participation trends of some of New Zealand's younger birth cohorts. In the same way, it would be possible to develop a cumulative cohort completion rate to look at how many people from a birth cohort complete a particular level of tertiary education by a certain age.

The introduction of the national student number in 2002 has allowed the linking of senior secondary and tertiary education data. From this, the Ministry of Education created a longitudinal unit-record level dataset that allows a student to be followed from their academic achievement at senior secondary school through to enrolment in tertiary education.<sup>5</sup> The introduction of this longitudinal dataset will allow, in time, the calculation of an accurate cumulative cohort participation rate using a cohort of students who were in year 11 at secondary school in any given year. Through the use of the unique national student numbers, the cumulative cohort participation rate will then be able to track that cohort through senior secondary school into tertiary education.

A further advantage of using this longitudinal dataset to calculate the cumulative cohort participation rate is that industry training can be included, thus providing more information on an important part of the tertiary education system. While there are limitations that currently exist with this longitudinal dataset, it could, in the future, provide valuable information not only on people's participation in tertiary education but also on their participation in the senior levels of secondary school.

### References:

Newell, J. & Perry, M. (2006) *Trends in the contribution of tertiary education to the accumulation of educational capital in New Zealand: 1981-2001*, Wellington: Ministry of Education.

Scott, D. (2007) *Linking students: review of the methods used to link students in historical New Zealand tertiary education data*, Wellington: Ministry of Education.

Ussher, S. (2007a) *Participation in tertiary education: a birth cohort approach*, Wellington: Ministry of Education.

Ussher, S. (2007b) *Tertiary education choices of school leavers*, Wellington: Ministry of Education.

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5. For more information on this longitudinal unit-record level dataset refer to Ussher (2007b).