

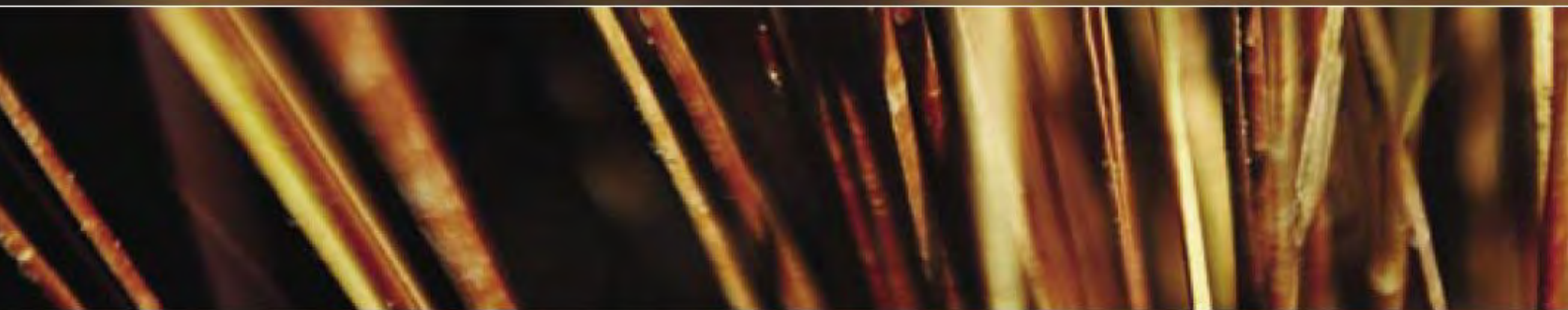


MINISTRY OF EDUCATION

Te Tāhuhu o te Mātauranga

Moving on up

*What young people earn after their
tertiary education*



This report forms part of a series called *Beyond Tertiary Study*. Topics covered by the series include how graduates' earnings change over time, labour market outcomes, education and economic growth, and qualifications and income.

Author

Paul Mahoney, Zaneta Park, Roger Smyth
Tertiary Sector Performance Analysis
Ministry of Education
Email: tertiary.information@minedu.govt.nz
Telephone: 04-463-2891
Fax: 04-463-8717

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SUMMARY

This report looks at the outcomes for young people who complete a qualification in the New Zealand tertiary education system. It looks at differences in incomes and employment rates for different types of qualifications. So the information in this report can help young people as they make decisions about what to study.

People take tertiary education for many reasons. They think about what they enjoy, what they are good at, what they are capable of and what will get them started on a career. Good careers are associated with better health, better well-being and more satisfying lives. So many young people are making their tertiary education choices to gain the skills they need for satisfying and rewarding work. They use a range of information sources to help them make these choices. The information in this report is designed to add to the data available to young people facing those decisions.

This information is not just important to students and to their families. The Government makes a very large investment in tertiary education each year – funding tertiary education providers, providing subsidised student loans and granting student allowances. One major purpose of the Government's investment is to help improve the New Zealand economy and society by raising the level of skill in the population – which helps make our society more productive, contributes to the creation of wealth and leads to better social outcomes.

Studying the earnings of graduates is one way of looking at the contribution that the tertiary education system is making to New Zealand's society and economy. So the information in this report contributes to an understanding of the value New Zealand receives for the investment we make in tertiary education.

KEY FINDINGS

Earnings increase with the level of qualification completed. Five years after finishing study, the median earnings of young people who complete a bachelors degree is 53 percent above the national median earnings and 46 percent above the median for young people who gain a certificate at levels 1-3.

Employment rates increase with level of qualification gained. For example, in the first year after study, 56 percent of young bachelors graduates were in employment and 38 percent were in further study. Of young people who had completed a level 1-3 certificate, 37 percent were in employment and 48 percent were taking more study.

Very few young people who complete a qualification at diploma level or above are on a benefit in the first five years after study. The benefit rate is 4 percent for diploma graduates and 2 percent at bachelors level. But it is around 10 percent for those who graduated with certificates at levels 1-3.

Earnings vary considerably by field of study. Young graduates with bachelors degrees in medicine earn the most after studying. The median income for medical graduates is over \$110,000 five years after leaving study.

Dental studies and pharmacy bachelors graduates earn the second highest incomes among young bachelors graduates after five years, with median earnings of over \$76,100 and \$75,100.

Engineering graduates with an honours degree have median earnings of \$65,000 five years

after study, compared with \$58,300 for a bachelors degree without honours.

Bachelors degree graduates in creative arts have the lowest earnings among young bachelors graduates after five years and they have relatively high rates of benefit receipt.

Some qualification types and some fields are associated with high rates of further study. Nearly half of all young people who complete a certificate move into further study the next year. Fifty-eight percent of young bachelors graduates in natural and physical sciences were in further study one year after completion of a bachelors degree, and 32 percent after five years. Other fields with high rates of continuing study include society and culture, health and agriculture, environmental and related studies.

1 THE EMPLOYMENT OUTCOMES OF TERTIARY EDUCATION

1.1 Why look at employment outcomes of tertiary education

This report looks at the outcomes for young domestic students who complete a qualification from a New Zealand tertiary education provider – a university, polytechnic, wānanga or a private training establishment.

Looking at outcomes means examining what happens to people after they have left tertiary education to trace the effects of having gained a tertiary education qualification. Examining the outcomes of tertiary education is one of the most important analyses we can do because the real value of tertiary education lies in the extent to which it helps people achieve satisfying lives and productive careers.

People take tertiary education for many reasons. But a very important reason for study among most young people is to start building a career – to gain the skills they need for satisfying and rewarding work. Good careers are associated with better health, better well-being and more satisfying lives. Gaining a tertiary education costs a lot, financially and in time. Young people need to be satisfied that the investment in study is likely to have long-term benefits. So in this report, we look at employment outcomes – whether people get a job after studying and if so, how much they earn.

These analyses are not just important to students and to their families. The Government makes a very large investment in tertiary education each year – funding tertiary education providers, providing subsidised student loans and granting student allowances. A major purpose of the Government's investment is to help improve the New Zealand economy and society by raising the level of skill in the population – which helps make our society more productive, contributes to the creation of wealth and leads to better social outcomes.

Many economists measure human capital by looking at people's earnings. The reason is that what an employer pays is an indicator of how much value the worker creates – because the employer cannot pay a person more than the value created by that employee.

So studying the earnings of graduates is a way of looking at the contribution that the tertiary education system is making to New Zealand's society and economy.

1.2 How we analyse the employment outcomes of tertiary education

We use data from Statistics New Zealand's Integrated Data Infrastructure (IDI) prototype¹ to look at the outcomes of tertiary education. This dataset is managed by Statistics New Zealand and links together each individual's tertiary education enrolment and completions data to data on:

- earnings and income (from Inland Revenue)
- welfare benefits (from the Ministry of Social Development)
- border crossings (from Immigration New Zealand)

¹ Statistics New Zealand will deliver the final IDI in 2013 and this will replace the IDI prototype. All subsequent references to the IDI in this report are to the IDI prototype.

This dataset is updated periodically so that it is longitudinal – that is, we can trace each person’s progress from year to year in the data.

The IDI is managed under strict confidentiality rules by Statistics New Zealand that guarantee the privacy of the data. These rules protect individual people and businesses from identification.

From the IDI data, we can:

- look at whether a person with a particular educational qualification is in employment, is overseas, has returned to study or is on a benefit
- for those in work, find out how much they are earning
- relate these outcomes to the characteristics of people – gender, ethnicity, age, type of study, student loans and allowances, prior school achievement etc.

In this report, we look at the destinations and earnings of young New Zealand students who complete a tertiary qualification. In this report, we are interested in:

Earnings

For those graduates who are in New Zealand and in employment:

- What is their median earnings? What is the range of earnings for the majority of graduates?
- How does a graduate’s earnings change over the first five years post study²?

Destinations

For graduates who remain in New Zealand:

- What percentage is in further study over the five years after finishing a tertiary qualification?
- What percentage is in employment?
- What percentage is on a benefit?
- What percentage is missing from the labour market?

It is well known that the outcomes of tertiary education depend on the level of the qualification. They are also heavily dependent on the field of study. So in this report, we present data on outcomes, broken down by level and field of study.

1.3 Why is the data in this report so important?

People choose their study plans for many reasons – what they enjoy, what they are good at, what they capable of and what will get them started on a career. They use a range of information sources to help them make the best choices they can. The information in this report is designed to be an additional aid for people facing those decisions.

It is based on factual, comprehensive and up-to-date data on how young people fare in the labour market after they finish tertiary study.

² The first five years post study is the period over which the graduate’s formal education has the greatest impact. As time goes on, the influence of a qualification is complemented by the effects of the person’s work experience.

This new data on employment rates and earnings shouldn't *determine* people's choices – rather it should be used alongside other sources of information. This data is useful and important, but is best used as a complement to information on Careers New Zealand's website (www.careers.govt.nz), advice from family members, careers advisors and others and from each individual's preferences and strengths. We have set out to add to the information available to help people choose – not to replace existing information.

It is also important to recognise that whether a person gets a job and how much he or she earns depend on a range of factors – such as the ability of the person, how well the person presents an application for work – not simply the demand for the skills acquired in education. So not all graduates with a particular level and field of study will get the sort of outcomes set out in the tables in this report.

Other new sources of information to help young people make choices

The data in this report will also be made available on Careers New Zealand's website in a tool that helps people make comparisons between the outcomes of particular fields and levels of study. This is available at: www.careers.govt.nz. We expect that most people who want to use the data in this report will access it through the Careers New Zealand 'compare study type' tool.

Another important source of information that can help people make career and study choices is an occupational outcomes report due for publication by the Ministry of Business, Innovation and Employment in early 2013. This report provides snapshot summaries of the prospects of 40 major occupations. It looks at whether there is likely to be growth in demand in those occupations and it includes data on earnings in each occupation.

1.4 Future work planned in this series

The Ministry of Education plans to do more work on the employment outcomes of tertiary education in the future. We plan to:

- do more detailed destinations analysis, including data on the proportion who leave New Zealand
- do analyses that look at the outcomes for particular groups – for instance, women, Māori and Pasifika
- research the outcomes for people who don't attend tertiary education
- explore how much of the benefit of tertiary education qualifications is due to the qualification and how much to innate ability of the graduate
- extend the analysis in this report to other forms of tertiary education – especially to industry training.

In addition, the Ministry of Business, Innovation and Employment undertakes research using the IDI data that also explores outcomes. A recent example is the 2012 report by Tas Papadopoulos *Who left, who returned and who was still away?* which uses IDI data to look at the emigration of New Zealand graduates. That report is available at: <http://dol.govt.nz/publication-view.asp?ID=441>.

This report gives data on differences in outcomes between levels and fields of study. We can use a similar method to look at differences between similar qualifications offered at different providers. The Ministry of Education is exploring that possibility now.

1.5 The data and the methodology used in this report

This section gives a short overview of some of the data questions. Chapter 12 sets this information out in much greater detail.

Outcomes for young graduates

The data in this report gives the earnings and destinations over the first five years after graduates complete a qualification.

We only report the destinations for the people who remain in New Zealand after completing study. You can find out more about those who leave New Zealand by referring to the report *Who left, who returned and who was still away?* published by the Ministry of Business, Innovation and Employment, available at <http://dol.govt.nz/publication-view.asp?ID=441>.

We report the outcomes only for ‘young’ graduates. For each type of qualification, we set an age range that means we are looking only at those who start that qualification and move to completion before undertaking substantial time in the workforce. We restrict the analysis to young graduates because the aim of the analysis is to support the decision-making of young people. If we mixed the outcomes of young graduates with the outcomes for people who undertake tertiary study after substantial work experience, we would be unable to separate the effects of the qualification from the effects of the work experience.

This table shows the age ranges for graduates who meet the criteria for being a ‘young’ graduate.

Table 1

Age ranges for consideration as a ‘young’ graduate

Qualification type	Length of qualification – in full-time equivalent years	Highest age on completion to be considered a ‘young’ graduate
Doctorate	Four years	29
Masters	Two years	27
Level 8 – honours and pg dip or cert	One year	26
Graduate certificates and diplomas	One year	26
Bachelors degrees	Three years	24
	Longer than three years	24 plus 1 for each year beyond three years
Diplomas at levels 5-7	Two years	23
Certificates at level 4	One year	21
Certificates at levels 1-3	One year	21

Source: Ministry of Education

Domestic students

We report outcomes and earnings for domestic students only, excluding any international students. We do this because we have no information about the prior qualifications, labour market experience or earnings of international students, so we can be less certain of associating outcomes to New Zealand study experiences for international students.

Field of study

Field of study classification

We use the New Zealand Standard Classification of Education (or NZSCED) to classify people’s study into various fields of study. NZSCED has three levels of classification – broad field of study, narrow field and detailed field.

People graduating in more than one field of study are counted in each of the fields of study. The number of students in each narrow field of study may not sum to the broad field of study total. This is because students can be enrolled in multiple narrow fields of study.

Narrow and broad fields of study

Most of our analysis is by broad field of study because if we divide our population of graduates too finely, we end up having to suppress more data because it breaches the Statistics New Zealand confidentiality limits. Chapters 3 to 10 of this report look at earnings by *broad* field of study. There are differences between narrow fields of study that are not apparent when we look at data on broad field. The broad field of *natural and physical sciences* contains narrow fields of *mathematical sciences, chemical sciences, physics and astronomy, earth sciences and biological sciences*. The tables in Chapter 11 of this report and the tables published with this report on the Education Counts website give detail of outcomes by narrow field of study, in fields where there are enough graduates to enable us to report without breaching the Statistics New Zealand confidentiality requirements.

How we classify a graduate's field of study

For each graduate, we look at the range of courses passed and we examine the field of study for each course. We then infer that graduate's specialisation(s) by looking at the highest level courses done and working out which fields of study represent a 'substantial' amount of study. It is important to note that this may not agree with the provider's understanding of the field(s) of study in which that person specialised. Nor may it agree with the graduate's understanding. Rather, it reflects what is on that student's transcript³.

One consequence of this is that we report on some fields where it is commonly assumed there is only one provider – veterinary studies is an example. It is usually assumed that anyone specialising in that field at bachelors level has done the Bachelor of Veterinary Science degree taught at Massey University. In fact there are three providers whose bachelors graduates are represented in that field. Only the Massey Bachelor of Veterinary Science graduates are recognised as veterinarians. But some graduates at other providers have completed bachelors degrees with a substantial amount of higher level courses in veterinary studies.

Access to the data

Access to the IDI data used in this study was provided by Statistics New Zealand in accordance with security and confidentiality provisions of the Statistics Act 1975 and secrecy provisions of the Tax Administration Act 1994.

The results presented in this study are the work of the authors, not Statistics New Zealand.

Confidentialisation

The results in this paper have been confidentialised to protect individuals and businesses from identification. All counts in tables have been randomly rounded to base 3. This may result in a total not agreeing with the sum of individual items shown in the table.

We aggregated data from two cohorts of graduates in order to increase the numbers in the sample and hence, to ensure more data could meet Statistics New Zealand's confidentiality requirements.

Cells marked 'C..' represent numbers suppressed as not meeting Statistics New Zealand's dataset confidentiality requirements. This includes suppression of blank cells in line with Statistics New Zealand's confidentiality rules.

³ The method used is set out in Scott D (2008) *Trends in fields of study of bachelors degree graduates in New Zealand* Ministry of Education.

Earnings data

All earnings reported are gross earnings.

Earnings are reported only for graduates for whom we deem work is their main activity, in each year independently post-graduation. See Chapter 12 for more information on how main activity in each year post-study is derived.

Adjusting the data for changes in national wage rates

The data on earnings is for the tax years ended 31 March 2009-2010. It has been converted to 2011 dollars using the Labour Cost Index. Earnings data shown in this report is otherwise as actually observed in IRD data, and there has been no further adjustment.

Part-time vs full-time work

IRD employment data does not contain information on the number of hours worked. This means that there will be an understatement of the earnings potential of a field of study if, for example, a substantial proportion of the graduates in that field work on a part-time basis.

No occupation information

IRD employment data does not contain information on the occupations in which people are employed. We can only show the field of study that graduates studied and readers should note employees may be working in any industry and any occupation, not just those implied by the field of study classification.

More information on data and methodology

More information about the IDI dataset, how it is managed and the means of protecting privacy and detail on the indicators and measures we have developed are in chapter 12 of this report,

2 THE EMPLOYMENT OUTCOMES OF TERTIARY EDUCATION

This chapter looks at the destinations and earnings of young domestic students who completed a tertiary education qualification at a provider in New Zealand.

Our analysis confirms well-established facts:

- *Earnings increase with the level of qualification completed.*

Young graduates with bachelors earn more than graduates at certificate and diploma levels. Five years after leaving study, the median earnings of young bachelors graduates is \$50,900, compared with \$39,700 for diplomas and \$34,800 for level 1-3 certificates.

- *Five years after leaving study, most young domestic graduates will be earning above the national median earnings.*

Five years after study, half of young people who completed a level 1-3 certificate were earning 4 percent above the national median. For bachelors, median earnings were 53 percent above the national median. And for young masters graduates, the figures was 86 percent above the national median.

- *Among those who remain in New Zealand following completion of their studies, graduate employment rates increase with level of qualification gained.*

In the first year after study, 56 percent of young bachelors graduates are in employment, with 38 percent in further study. For diplomas, the figures are 46 percent in employment and 46 percent in further study. For level 1-3 certificates – many of which focus on preparing people for higher level study – 37 percent are in employment and 48 percent are in further study.

- *Completing a higher level qualification is associated with lower benefit receipt.*

In the first five years after study, less than 2 percent of young bachelors graduates who stay in New Zealand are on a benefit. For level 1-3 certificates, the proportion on a benefit over the first five years is between 9 and 12 percent.

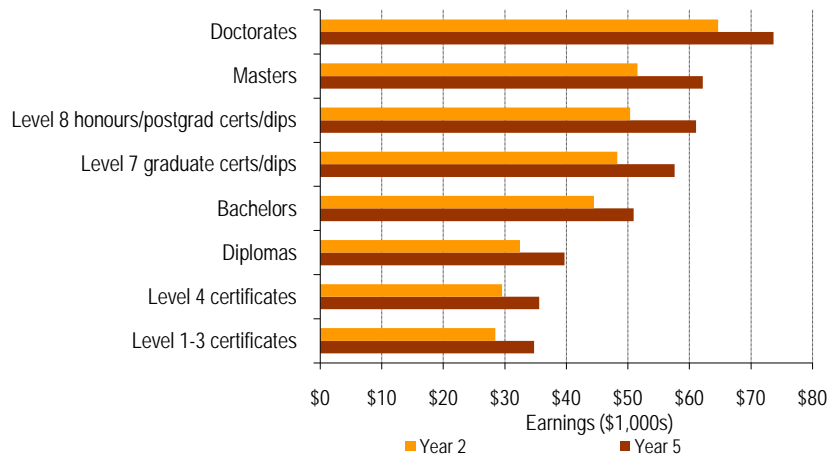
The tables that follow set out:

- the median earnings of young domestic graduates at each qualification level over the first five years following study
- the employment and the further study rate at each qualification level over the first five years following study

They also look at how quickly earnings grow over the first five years following study and they compare the median earnings at each qualification level.

Figure 1

Median earnings of young domestic completers two and five years after study, by qualification level



Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 2

Median and quartile annual earnings of young domestic graduates, one, two and five years after study by qualification level.

Level of study	Measure	Years after study		
		One	Two	Five
Doctorate	Upper quartile	\$69,061	\$74,675	\$84,262
	Median	\$56,116	\$64,664	\$73,637
	Lower quartile	\$35,444	\$50,994	\$58,319
Masters degree	Upper quartile	\$55,588	\$60,498	\$75,523
	Median	\$45,556	\$51,531	\$62,140
	Lower quartile	\$32,473	\$39,566	\$45,715
Level 8 – bachelors honours/pg dip or cert	Upper quartile	\$52,692	\$58,293	\$76,375
	Median	\$46,198	\$50,376	\$61,066
	Lower quartile	\$35,484	\$40,014	\$44,914
Graduate certificate or diploma	Upper quartile	\$51,383	\$54,842	\$67,535
	Median	\$46,203	\$48,274	\$57,574
	Lower quartile	\$39,501	\$41,306	\$42,923
Bachelors degree	Upper quartile	\$46,642	\$51,244	\$63,366
	Median	\$39,701	\$44,474	\$50,938
	Lower quartile	\$28,543	\$34,311	\$37,576
Diploma	Upper quartile	\$36,930	\$40,523	\$50,029
	Median	\$29,316	\$32,439	\$39,694
	Lower quartile	\$20,227	\$23,107	\$28,358
Certificate at level 4	Upper quartile	\$32,354	\$35,910	\$43,936
	Median	\$26,630	\$29,557	\$35,565
	Lower quartile	\$18,342	\$20,815	\$25,881
Certificate at levels 1-3	Upper quartile	\$31,653	\$35,083	\$44,114
	Median	\$24,792	\$28,437	\$34,751
	Lower quartile	\$15,556	\$19,476	\$24,773

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

The median value is the half way point in the ranking of earnings – so half the people earn above the median and half earn below the median.

The upper quartile is the value that is a quarter of the way from top to bottom in the ranking of earnings – so a quarter of the people earn above the upper quartile and three quarters earn below the upper quartile.

The lower quartile is the value that is three quarters of the way from top to bottom in the ranking of earnings – so a quarter of the people earn below the lower quartile and three quarters earn above the lower quartile.

While we often focus on the median earnings, there is a lot of variation at each level. For instance, the upper quartile of those who complete undergraduate tertiary qualifications is around 25 percent more than the median. A quarter of young bachelors graduates earn less than \$37,600, which is 26 percent below the median.

These variations reflect factors such as field of study, industry of employment and occupation. Variation in earnings also reflects individual differences that are not evident in the data – such as motivation and performance on the job.

We look at differences that result from field of study in all the other chapters in this report.

Table 3

Median annual earnings of young domestic, one, two and five years after study, as a percentage of the national median earnings by qualification level.

Qualification level	Years after study %		
	One	Two	Five
Doctorate	168	194	221
Masters degree	137	155	186
Level 8 – bachelors honours, pg dip or cert	139	151	183
Graduate certificate or diploma	139	145	173
Bachelors degree	119	133	153
Diploma at levels 5-7	88	97	119
Certificate at level 4	80	89	107
Certificate at levels 1-3	74	85	104

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 3 shows that:

- More than half of those who complete a qualification at bachelors or higher earn above the national median earnings in their first year out of study
- While the median starting earnings for lower-level qualifications is below the national median, people with those qualifications catch up over time. Five years after completing, more than half those young people who finished a level 1-3 certificate will be earning above the national median.
- People with postgraduate qualifications command high earnings – with half of young doctoral graduates earning more than twice the national median in their fifth year out of study and the median for masters and those who finish level 8 qualifications approaching twice the national median.

Table 4

Growth in median annual earnings of young domestic graduates, over the first five years after study by qualification level.

Qualification level	Percentage		
	Over the first year	Over the first five years	Average annual growth over the first five years
Doctorate	15	31	7
Masters degree	13	36	8
Level 8 – bachelors honours, pg dip or cert	9	32	7
Graduate certificate or diploma	4	25	6
Bachelors degree	12	28	6
Diploma at levels 5-7	11	35	8
Certificate at level 4	11	34	8
Certificate at levels 1-3	15	40	9

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Young graduates don't have much work experience. So we expect their earnings to grow quite quickly as they complement what they have learned in study with experience at work. Table 4 shows that earnings rise at a high rate among those who completed a certificate or diploma as they gain experience in work.

Table 5

Median earnings of young domestic graduates at each qualification level, compared with median earnings of young domestic completers of a level 1-3 certificate and compared with the national median earnings, two and five years following study

Qualification level	Compared with a level 1-3 certificate %		Compared with National Median Earnings 2011 %	
	Two years after study	Five years after study	Two years after study	Five years after study
Doctorate	227	212	194	221
Masters degree	181	179	155	186
Level 8– bachelors honours, pg dip or cert	177	176	151	183
Graduate certificate or diploma	170	166	145	173
Bachelors degree	156	147	133	153
Diploma at levels 5-7	114	114	97	119
Certificate at level 4	104	102	89	107
Certificate at levels 1-3	100	100	85	104

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 5 shows that:

- the median earnings of young bachelor graduates is 147 percent of the earnings of those who leave with a level 1-3 certificate five years after leaving study
- the median earnings of those who complete a certificate at level 4 is 102 percent of the median earnings of those who leave with a level 1-3 certificate, five years after study.

Table 6

Proportion of young domestic graduates who were in New Zealand who were in employment and in further study in the first and fifth years after study by qualification level.

Qualification level	One year after study %		Five years after study %	
	In employment	In further study	In employment	In further study
Doctorate	79	11	79	11
Masters degree	68	24	67	23
Level 8 qualification – bachelors honours, pg dip or cert	55	40	69	21
Graduate certificate or diploma	78	17	74	12
Bachelors degree	56	38	70	19
Diploma at levels 5-7	46	46	64	24
Certificate at level 4	40	50	58	28
Certificate at levels 1-3	37	48	53	28

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 6 shows that:

- At undergraduate level, employment rates rise with the level of qualification. They also rise over time – a high proportion of young graduates who undertake further study start that in the first year after completion.
- A high proportion of young people who complete certificates go on to further study – reflecting the focus of many certificates in providing preparation for people to undertake study at higher levels.

The remaining chapters in this analysis look at differences in outcomes by qualification level and by field of study.

3 OUTCOMES FOR YOUNG DOCTORAL GRADUATES

3.1 Introduction

This chapter looks at the destinations and earnings of young domestic students who graduated from providers in New Zealand with a doctoral degree.

Doctoral degrees

Each year, around 1,000 students complete a doctorate in the New Zealand tertiary education system, about 18 percent of them ‘young’ domestic students, in the way we define that term in this report. These qualifications are mostly taken by people who have already completed a postgraduate degree and who want to extend their qualifications by taking a substantial research project that breaks new ground.

Nearly all doctoral qualifications are completed at universities.

Due to confidentiality requirements, we are only able to report results in this section on natural and physical sciences, society and culture and engineering and related technologies. The fact that only three fields have sufficient graduates is partly because a relatively high proportion of the young people who complete a doctorate in New Zealand come from overseas while many domestic graduates go overseas during their first five years out of study⁴. Also, in many fields of study, it is common to undertake a doctorate at an older age.

People with doctoral degrees work in a wide variety of occupations and industries.

It is important to bear in mind, when reading the analysis below, that we are looking at *broad* fields of study. There are differences between narrow fields of study that are not apparent when we look at data on broad field.

3.2 What we found

Earnings

- In the first year after study, the median earnings in 2011 dollars of all⁵ young doctoral graduates was \$56,100.⁶ This rose by 15 percent in the following year, and by an average of 7 percent a year over the first five years post study, to reach \$73,600.
- The median starting salary for young doctoral graduates is 68 percent above the national median earnings for all qualifications for people aged 15-64. Five years post study, the median earnings was more than double the national median.
- The top quarter of young doctoral degree graduates were earning \$84,300 or more a year in the fifth year after finishing study, while the lowest quarter earned \$58,300 or less.
- Compared with all doctoral graduates, the median earnings of young doctoral graduates in *natural and physical sciences* was lower, while those who took their doctorate in *engineering* had higher median earnings. The top quarter of earners among young doctoral

⁴ In many occupations that doctoral graduates aspire to – such as scientific researcher – a period overseas as a post-doctoral fellow is a standard part of the career path. Papadopoulos (2012) and Smart (2011) look at this question.

⁵ The results for ‘all’ graduates include those who completed in every field of study, not just the three fields for which we report disaggregated results.

⁶ Earnings reported in text are rounded to three significant figures. Refer to each table for unrounded earnings.

graduates in *natural and physical sciences* earned \$81,000 or higher five years post study compared with \$84,300 for the top quarter of all doctorate degree completers.

- Earnings of doctoral graduates in *society and culture* showed the greatest variation. While the median and lower quartile were below the corresponding figures for the whole group of young doctoral graduates five years post study – by 8 percent and 30 percent respectively – the upper quartile was higher than the upper quartile for all fields.

Destinations

- Of the young doctoral completers who were in New Zealand in the first year after study, 79 percent were in employment that year and 11 percent in further study.
- The employment rate in the first year after study for young doctoral graduates in *engineering* was significantly higher at 93 percent. The employment rate for young doctoral graduates in *society and culture* was initially low, as many undertook additional study. But by the third to fifth year post study, the employment rate was much higher at 92 percent.

Figure 2

Median and upper and lower quartile earnings for young domestic doctoral degree completers in the first five years after study

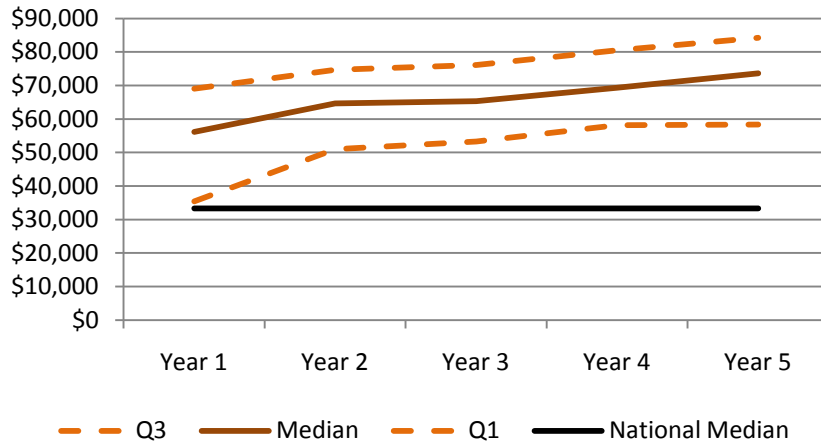
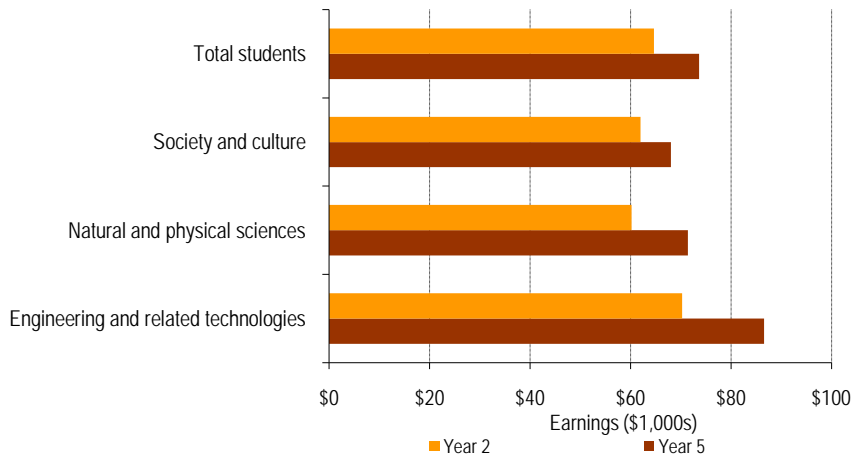


Figure 3

Median earnings of young domestic doctoral degree completers two and five years after study



Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

The median value is the half way point in the ranking of earnings – so half the people earn above the median and half earn below the median.

The upper quartile is the value that is a quarter of the way from top to bottom in the ranking of earnings – so a quarter of the people earn above the upper quartile and three quarters earn below the upper quartile.

The lower quartile is the value that is three quarters of the way from top to bottom in the ranking of earnings – so a quarter of the people earn below the lower quartile and three quarters earn above the lower quartile.

Table 7

Median and quartile annual earnings of young domestic doctoral degree completers, one, two and five years after study by broad field of study.

Field of study	Measure	Years after study		
		One	Two	Five
Engineering and related technologies	Upper quartile	\$66,630	\$82,375	C..
	Median	\$62,773	\$70,232	\$86,596
	Lower quartile	\$51,916	\$58,131	C..
Natural and physical sciences	Upper quartile	\$67,000	\$68,258	\$81,027
	Median	\$51,725	\$60,217	\$71,412
	Lower quartile	\$30,820	\$44,067	\$59,720
Society and culture	Upper quartile	\$67,394	\$75,290	\$85,293
	Median	\$48,349	\$61,965	\$68,037
	Lower quartile	\$33,542	\$47,176	\$40,948
All	Upper quartile	\$69,061	\$74,675	\$84,262
	Median	\$56,116	\$64,664	\$73,637
	Lower quartile	\$35,444	\$50,994	\$58,319

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

The median value is the half way point in the ranking of earnings – so half the people earn above the median and half earn below the median.

The upper quartile is the value that is a quarter of the way from top to bottom in the ranking of earnings – so a quarter of the people earn above the upper quartile and three quarters earn below the upper quartile.

The lower quartile is the value that is three quarters of the way from top to bottom in the ranking of earnings – so a quarter of the people earn below the lower quartile and three quarters earn above the lower quartile.

Table 8

Median annual earnings of young domestic doctoral degree completers, one, two and five years after study, as a percentage of the national median earnings by broad field of study,

Field of study	Years after study %		
	One	Two	Five
Engineering and related technologies	188	211	260
Natural and physical sciences	155	181	214
Society and culture	145	186	204
All	168	194	221

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 9

Growth in median annual earnings of young domestic doctoral degree completers, over the first five years after study by broad field of study

Field of study	Percentage		
	Over the first year	Over the first five years	Average annual growth over the first five years
Engineering and related technologies	12	38	8
Natural and physical sciences	16	38	8
Society and culture	28	41	9
All	15	31	7

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 10

Proportion of young domestic doctoral degree completers who were in New Zealand who were in employment and in further study in the first and fifth years after study by broad field of study,

Field of study	One year after study %		Five years after study %	
	In employment	In further study	In employment	In further study
Engineering and related technologies	93	7	100	25
Natural and physical sciences	80	10	79	11
Society and culture	70	20	92	8
All	79	11	79	11

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Note that the sum across categories can be greater than 100 percent due to rounding to base 3. Refer to Chapter 12 for full notes.

4 OUTCOMES FOR YOUNG MASTERS DEGREE GRADUATES

4.1 Introduction

This chapter looks at the destinations and earnings of young domestic students who graduated from providers in New Zealand with a masters degree.

Masters degrees

Each year, around 4,000 students complete a masters degree in the New Zealand tertiary education system, about 28 percent of them ‘young’ domestic students, in the way we define that term in this report. These qualifications are mostly taken by people who have already completed a bachelors degree and who want to extend their qualifications by taking their area of specialisation to a more advanced level. Masters degrees require students to undertake a substantial research project as part of their studies.

The great majority – about 94 percent – of masters qualifications are completed at universities.

Ten of the twelve broad fields of study had enough young completers for us to be able to report on them in this analysis. The two that we don’t report on are:

- Food hospitality and personal services
- Mixed field programmes.

People with masters degrees work in a wide variety of occupations and industries.

It is important to bear in mind, when reading the analysis below, that we are looking at *broad* fields of study. There are differences between narrow fields of study that are not apparent when we look at data on broad field. Data on outcomes by narrow field can be found in the tables published on the Education Counts website.

4.2 What we found

Earnings

- In the first year after study, the median earnings in 2011 dollars of all young masters graduates was \$45,600. This rose by 13 percent in the following year, and by an average of 8 percent a year over the first five years post study, to reach \$62,100.
- Five years post study, the median earnings for the young masters graduates was 86 percent above the national median earnings for all qualifications for people aged 15-64.
- The top quarter of young masters degree graduates were earning \$75,500 or more a year in the fifth year after finishing study, while the lowest quarter earned \$45,700 or less.
- There was some variation in earnings by field of study. The field with the highest median five years after completion of study was *management and commerce* (\$72,300). The top quarter of earners among young masters graduates in *management and commerce* earned \$90,900 or more while the top quarter of *information technology* young masters degree completers earned \$92,900 or more.

- At the other end of the spectrum, holders of a masters degree in *education* had a median of \$42,100 five years after leaving study. The fact that the median earnings fell over the five years post study for young masters graduates in *education* appears to result from a move towards part-time employment among the graduates – the lower quartile earnings of \$26,000 in year five suggests this. Likewise, the very low lower quartile figure for young masters graduates in *creative arts* may reflect part-time employment.

Destinations

- Of the young masters graduates who were in New Zealand in the first year after study, 68 percent were in employment that year and 24 percent in further study.
- The broad fields of study with the highest proportion in employment one year after finishing study were *architecture and building* (83 percent) and *information technology* (82 percent). After five years, a high proportion of young masters graduates in *education* were in further study – 40 percent.

Figure 4

Median and upper and lower quartile earnings for young domestic masters degree graduates in the first five years after study

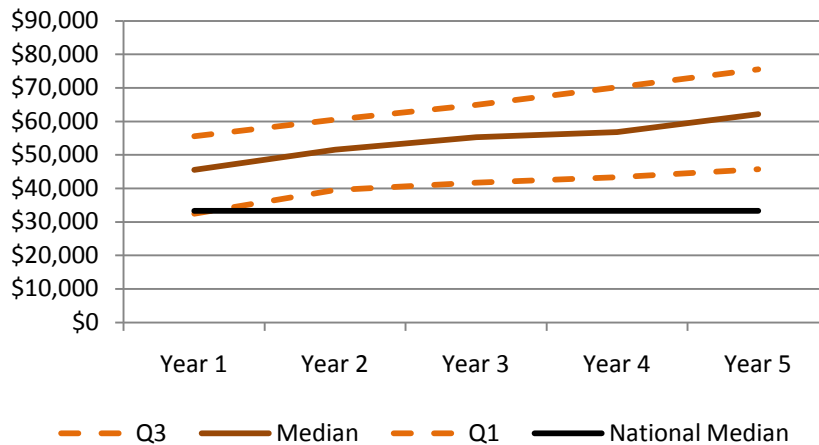
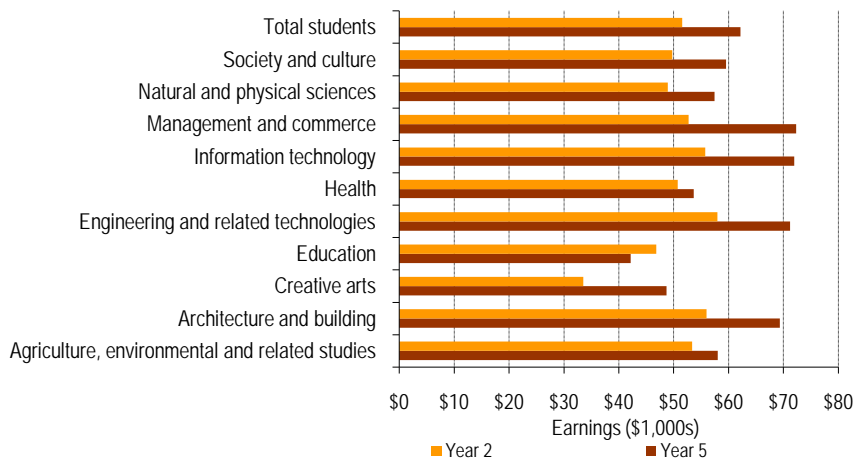


Figure 5

Median earnings of young domestic masters degree graduates two and five years after study



Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

The median value is the half way point in the ranking of earnings – so half the people earn above the median and half earn below the median.

The upper quartile is the value that is a quarter of the way from top to bottom in the ranking of earnings – so a quarter of the people earn above the upper quartile and three quarters earn below the upper quartile.

The lower quartile is the value that is three quarters of the way from top to bottom in the ranking of earnings – so a quarter of the people earn below the lower quartile and three quarters earn above the lower quartile.

Table 11

Median and quartile annual earnings of young domestic masters degree graduates, one, two and five years after study by broad field of study,

Field of study	Measure	Years after study		
		One	Two	Five
Agriculture, environmental and related studies	Upper quartile	\$52,554	\$57,695	\$71,355
	Median	\$51,049	\$53,332	\$58,029
	Lower quartile	\$45,656	\$41,918	\$37,574
Architecture and building	Upper quartile	\$56,130	\$60,801	\$76,392
	Median	\$50,009	\$55,954	\$69,306
	Lower quartile	\$34,163	\$49,760	\$64,853
Creative arts	Upper quartile	\$45,382	\$46,958	\$58,188
	Median	\$32,563	\$33,538	\$48,710
	Lower quartile	\$18,153	\$20,539	\$23,633
Education	Upper quartile	C..	\$59,651	\$66,111
	Median	\$54,608	\$46,816	\$42,149
	Lower quartile	C..	\$26,320	\$26,041
Engineering and related technologies	Upper quartile	\$61,603	\$67,655	\$87,608
	Median	\$53,402	\$57,963	\$71,201
	Lower quartile	\$44,846	\$51,648	\$61,083
Health	Upper quartile	\$58,226	\$62,185	\$71,117
	Median	\$45,387	\$50,707	\$53,655
	Lower quartile	\$42,703	\$42,986	\$42,952
Information technology	Upper quartile	\$55,944	\$64,891	\$92,861
	Median	\$47,366	\$55,755	\$71,944
	Lower quartile	\$36,759	\$49,835	\$59,495
Management and commerce	Upper quartile	\$58,170	\$65,634	\$90,861
	Median	\$46,609	\$52,699	\$72,312
	Lower quartile	\$31,742	\$42,500	\$50,867
Natural and physical sciences	Upper quartile	\$50,640	\$55,576	\$68,875
	Median	\$42,035	\$48,948	\$57,424
	Lower quartile	\$30,699	\$40,494	\$46,349
Society and culture	Upper quartile	\$54,030	\$58,835	\$73,901
	Median	\$43,311	\$49,754	\$59,543
	Lower quartile	\$29,335	\$36,599	\$40,774
Total students	Upper quartile	\$55,588	\$60,498	\$75,523
	Median	\$45,556	\$51,531	\$62,140
	Lower quartile	\$32,473	\$39,566	\$45,715

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

The median value is the half way point in the ranking of earnings – so half the people earn above the median and half earn below the median.

The upper quartile is the value that is a quarter of the way from top to bottom in the ranking of earnings – so a quarter of the people earn above the upper quartile and three quarters earn below the upper quartile.

The lower quartile is the value that is three quarters of the way from top to bottom in the ranking of earnings – so a quarter of the people earn below the lower quartile and three quarters earn above the lower quartile.

Table 12

Median annual earnings of young domestic masters degree graduates, one, two and five years after study, as a percentage of the national median earnings by broad field of study,

Field of study	Years after study %		
	One	Two	Five
Agriculture, environmental and related studies	153	160	174
Architecture and building	150	168	208
Creative arts	98	101	146
Education	164	140	126
Engineering and related technologies	160	174	214
Health	136	152	161
Information technology	142	167	216
Management and commerce	140	158	217
Natural and physical sciences	126	147	172
Society and culture	130	149	179
Total students	137	155	186

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 13

Growth in median annual earnings of young domestic masters degree graduates, over the first five years after study by broad field of study,

Field of study	Percentage		
	Over the first year	Over the first five years	Average annual growth over the first five years
Agriculture, environmental and related studies	4	14	3
Architecture and building	12	39	9
Creative arts	3	50	11
Education	-14	-23	-6
Engineering and related technologies	9	33	7
Health	12	18	4
Information technology	18	52	11
Management and commerce	13	55	12
Natural and physical sciences	16	37	8
Society and culture	15	37	8
Total students	13	36	8

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 14

Proportion of young domestic masters degree graduates who were in New Zealand who were in employment and in further study in the first and fifth years after study by broad field of study,

Field of study	One year after study %		Five years after study %	
	In employment	In further study	In employment	In further study
Agriculture, environmental and related studies	78	11	76	24
Architecture and building	83	11	64	27
Creative arts	70	16	69	15
Education	42	50	40	40
Engineering and related technologies	75	15	79	12
Health	72	21	61	32
Information technology	82	18	80	7
Management and commerce	71	17	70	15
Natural and physical sciences	62	27	60	32
Society and culture	60	31	68	23
Total students	68	24	67	23

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

5 OUTCOMES FOR YOUNG PEOPLE WHO COMPLETE HONOURS DEGREES AND POSTGRADUATE DIPLOMAS AND CERTIFICATES

5.1 Introduction

This chapter looks at the destinations and earnings of young domestic students who graduated from providers in New Zealand with a qualification at level 8 on the New Zealand Qualifications Framework – a bachelors honours degree or a postgraduate certificate or diploma.

Level 8 qualifications

Each year, between 9,000 and 10,000 students complete a level 8 qualification in the New Zealand tertiary education system, about 35 percent of them ‘young’ domestic students, in the way we define that term in this report. These qualifications are mostly taken by people who have already completed a bachelors degree and who want to extend their qualifications by taking their area of specialisation to a more advanced level.

The majority – about 88 percent – of level 8 qualifications are completed at universities, with about 6 percent completed at polytechnics and 6 percent at private training establishments.

Ten of the twelve broad fields of study had enough young completers for us to be able to report on them in this report. The two that we don’t report on are

- Food hospitality and personal services
- Mixed field programmes.

People with level 8 qualifications work in a wide variety of occupations and industries.

It is important to bear in mind, when reading the analysis below, that we are looking at *broad* fields of study. There are differences between narrow fields of study that are not apparent when we look at data on broad field. Data on outcomes by narrow field can be found in the tables published on the Education Counts website.

5.2 What we found

Earnings

- In the first year after study, the median earnings in 2011 dollars of all young graduates with a level 8 qualification was \$46,200. This rose by 9 percent in the following year, and by an average of 7 percent a year over the first five years post study, to reach \$61,000.
- Five years post study, the median earnings for the young level 8 graduates was 83 percent above the national median earnings for people aged 15-64 for all qualifications.
- The top quarter of young graduates with a level 8 qualification were earning \$76,400 or more a year in the fifth year after finishing study, while the lowest quarter earned \$44,900 or less.
- There was some variation in earnings by field of study. The field with the highest median five years after completion of study was *information technology* (\$71,300). The top quarter

of earners among young holders of a level 8 qualification in *information technology* earned \$86,100 or more. The top quarter of young level 8 graduates in *health* earned \$88,300.

- At the other end of the scale, holders of a level 8 qualification in *creative arts* had a median of \$41,100 five years after leaving study, with the top quarter of graduates earning above \$53,000. We are not in a position to account in detail for why this field has earnings lower than any other field. However, it is likely that many people taking study at this level in creative arts are motivated by their interests in practising the arts, despite the fact that the industry doesn't pay well. It is likely that many of those in the lowest quartile of earners are working part time.

Destinations

- Of the young level 8 qualification holders who were in New Zealand in the first year after study, 55 percent were in employment that year and 40 percent in further study.
- The high proportion in further study reflects the fact that many people use an honours degree as a route to a research qualification, such as a masters degree or a doctorate. More than half the young level 8 graduates in *agriculture, environmental and related studies* and two-thirds of those in *natural and physical sciences* were in further study in the first year following completion – these two are fields where progression from an honours degree to higher study is very common.
- Five years after finishing study, 69 percent of the young level 8 qualification holders who were in New Zealand were in employment and 21 percent in further study.

Figure 6

Median and upper and lower quartile earnings for young domestic level 8 qualification completers in the first five years after study

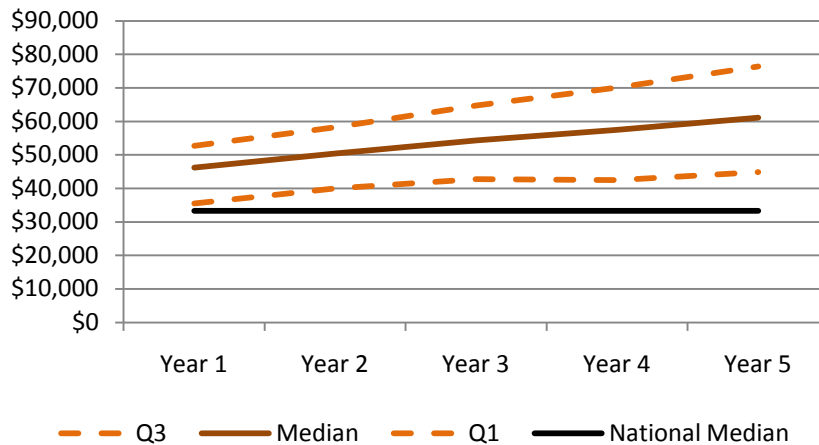
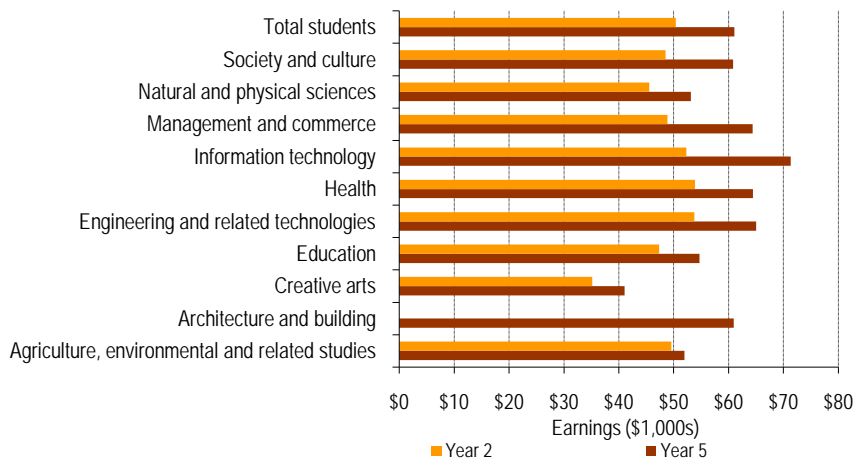


Figure 7

Median earnings of young domestic level 8 qualification completers two and five years after study



Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

The median value is the half way point in the ranking of earnings – so half the people earn above the median and half earn below the median.

The upper quartile is the value that is a quarter of the way from top to bottom in the ranking of earnings – so a quarter of the people earn above the upper quartile and three quarters earn below the upper quartile.

The lower quartile is the value that is three quarters of the way from top to bottom in the ranking of earnings – so a quarter of the people earn below the lower quartile and three quarters earn above the lower quartile.

Table 15

Median and quartile annual earnings of young domestic level 8 qualification completers, one, two and five years after study by broad field of study,

Field of study	Measure	Years after study		
		One	Two	Five
Agriculture, environmental and related studies	Upper quartile	\$52,644	\$54,908	\$65,856
	Median	\$41,351	\$49,544	\$51,937
	Lower quartile	\$32,310	\$37,771	\$39,764
Architecture and building	Upper quartile	C..	C..	\$69,151
	Median	\$52,746	C..	\$60,944
	Lower quartile	C..	C..	\$49,934
Creative arts	Upper quartile	\$38,567	\$42,388	\$52,951
	Median	\$28,730	\$35,183	\$41,062
	Lower quartile	\$18,453	\$21,373	\$23,424
Education	Upper quartile	\$47,772	\$53,200	\$60,586
	Median	\$44,473	\$47,377	\$54,712
	Lower quartile	\$33,924	\$38,413	\$42,651
Engineering and related technologies	Upper quartile	\$53,181	\$59,173	\$73,841
	Median	\$49,183	\$53,755	\$65,029
	Lower quartile	\$44,356	\$46,656	\$53,256
Health	Upper quartile	\$67,436	\$69,210	\$88,332
	Median	\$53,606	\$53,864	\$64,410
	Lower quartile	\$41,790	\$42,810	\$47,806
Information technology	Upper quartile	\$52,482	\$60,311	\$86,124
	Median	\$48,787	\$52,305	\$71,294
	Lower quartile	\$40,901	\$43,438	\$54,996
Management and commerce	Upper quartile	\$50,054	\$57,902	\$81,040
	Median	\$44,280	\$48,886	\$64,384
	Lower quartile	\$37,087	\$40,482	\$48,814
Natural and physical sciences	Upper quartile	\$47,939	\$53,440	\$66,039
	Median	\$38,491	\$45,561	\$53,113
	Lower quartile	\$28,896	\$35,551	\$41,355
Society and culture	Upper quartile	\$50,271	\$57,431	\$78,587
	Median	\$42,635	\$48,503	\$60,832
	Lower quartile	\$31,809	\$37,795	\$44,358
Total students	Upper quartile	\$52,692	\$58,293	\$76,375
	Median	\$46,198	\$50,376	\$61,066
	Lower quartile	\$35,484	\$40,014	\$44,914

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

The median value is the half way point in the ranking of earnings – so half the people earn above the median and half earn below the median.

The upper quartile is the value that is a quarter of the way from top to bottom in the ranking of earnings – so a quarter of the people earn above the upper quartile and three quarters earn below the upper quartile.

The lower quartile is the value that is three quarters of the way from top to bottom in the ranking of earnings – so a quarter of the people earn below the lower quartile and three quarters earn above the lower quartile.

Table 16

Median annual earnings of young domestic level 8 qualification completers, one, two and five years after study, as a percentage of the national median earnings by broad field of study,

Field of study	Years after study %		
	One	Two	Five
Agriculture, environmental and related studies	124	149	156
Architecture and building	158	C..	183
Creative arts	86	106	123
Education	133	142	164
Engineering and related technologies	148	161	195
Health	161	162	193
Information technology	146	157	214
Management and commerce	133	147	193
Natural and physical sciences	116	137	159
Society and culture	128	146	183
Total students	139	151	183

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 17

Growth in median annual earnings of young domestic level 8 qualification completers, over the first five years after study by broad field of study,

Field of study	Percentage		
	Over the first year	Over the first five years	Average annual growth over the first five years
Agriculture, environmental and related studies	20	26	6
Architecture and building	C..	16	4
Creative arts	22	43	9
Education	7	23	5
Engineering and related technologies	9	32	7
Health	0	20	5
Information technology	7	46	10
Management and commerce	10	45	10
Natural and physical sciences	18	38	8
Society and culture	14	43	9
Total students	9	32	7

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 18

Proportion of young domestic level 8 qualification completers who were in New Zealand who were in employment and in further study in the first and fifth years after study by broad field of study,

Field of study	One year after study %		Five years after study %	
	In employment	In further study	In employment	In further study
Agriculture, environmental and related studies	41	54	70	18
Architecture and building	44	44	69	15
Creative arts	48	44	69	25
Education	57	38	67	21
Engineering and related technologies	63	30	70	18
Health	55	42	63	27
Information technology	54	40	73	15
Management and commerce	61	35	78	12
Natural and physical sciences	29	67	58	32
Society and culture	55	40	69	21
Total students	55	40	69	21

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

6 OUTCOMES FOR YOUNG PEOPLE WHO COMPLETE GRADUATE DIPLOMAS AND CERTIFICATES

6.1 Introduction

This chapter looks at the destinations and earnings of young domestic students who graduated from providers in New Zealand with a graduate certificate or diploma.

Graduate certificates and diplomas

Each year, between 4,000 and 5,000 students complete a graduate certificate or diploma in the New Zealand tertiary education system, about 32 percent of them ‘young’ domestic students, in the way we define that term in this report. Graduate certificates and diplomas are mostly taken by people who have already completed a bachelors degree and who want to broaden their qualifications – essentially, adding an additional area of specialisation to their qualifications.

The majority of graduate certificates and diplomas are completed at universities, with between 14 and 17 percent completed at polytechnics and 15-16 percent at private training establishments.

Graduate certificates and diplomas include courses at level 7 – which is the same as the final year level of most bachelors degrees. Only eight of the twelve broad fields of study had enough young completers for us to be able to report on them in this report. The four that we don’t report on are

- Architecture and building
- Engineering and related technologies
- Food hospitality and personal services
- Mixed field programmes.

People with graduate certificates and diplomas work in a wide variety of occupations and industries.

It is important to bear in mind, when reading the analysis below, that we are looking at *broad* fields of study. There are differences between narrow fields of study that are not apparent when we look at data on broad field. Data on outcomes by narrow field can be found in the tables published on the Education Counts website.

6.2 What we found

Earnings

- In the first year after study, the median earnings in 2011 dollars of all young graduates with a graduate certificate or diploma was \$46,200. This rose by 4 percent in the following year, and by an average of 6 percent a year over the first five years post study, to reach \$57,600.
- Five years post study, the median earnings for the young graduate certificate or diploma completers was 73 percent above the national median earnings for all ages and qualifications.

- The top quarter of young holders of a graduate certificate or diploma were earning \$67,500 or more a year in the fifth year after finishing study, while the lowest quarter earned \$43,000 or less.
- There was some variation in earnings by field of study. The fields with the highest median five years after completion of study was *society and culture* and *information technology* where, in each case, the median was between \$65,000 and \$66,000. The top quarter of earners among young holders of a graduate certificate or diploma in *society and culture* was \$93,300, with the upper quartile in *management and commerce* being \$75,800.
- At the other end of the spectrum, young holders of a graduate certificate or diploma in *creative arts* had a median of \$45,600 five years after leaving study, with the top quarter of graduates earning above \$58,800.

Destinations

- Of the young graduate certificate or diploma holders who were in New Zealand in the first year after study, 78 percent were in employment that year and 17 percent in further study, reflecting that people use level 7 graduate certificates and diplomas as way to steer bachelors level work towards a vocation.

Figure 8

Median and upper and lower quartile earnings for young domestic graduate certificate and diploma completers in the first five years after study

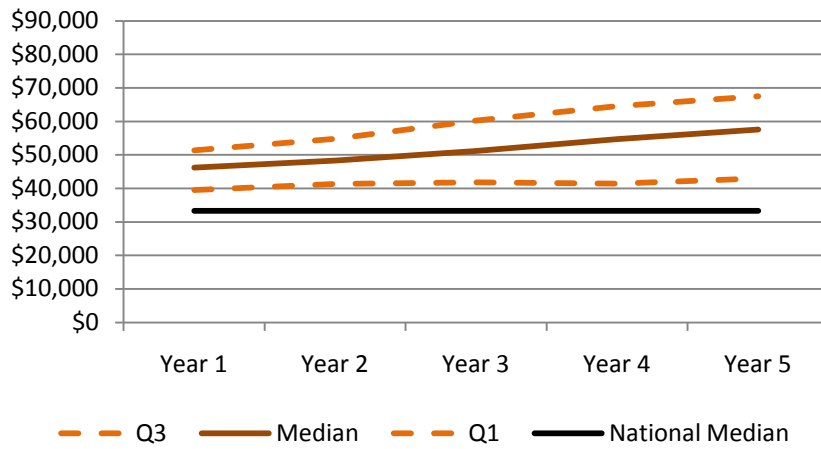
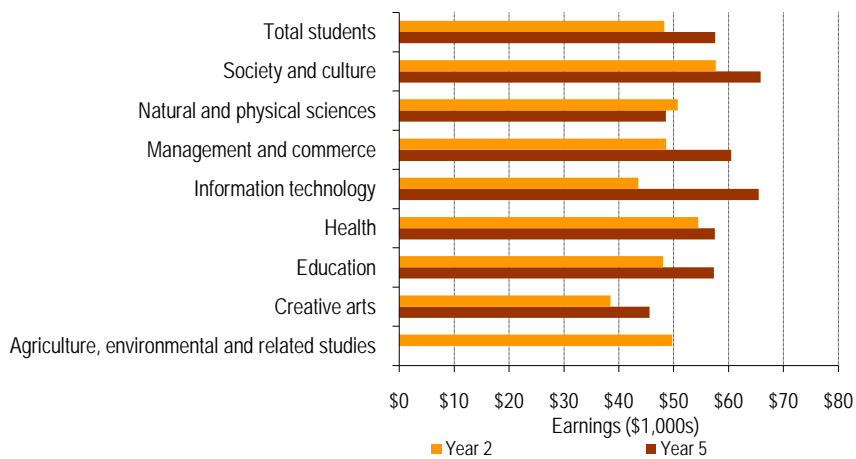


Figure 9

Median earnings of young domestic graduate certificate and diploma completers two and five years after study



Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

The median value is the half way point in the ranking of earnings – so half the people earn above the median and half earn below the median.

The upper quartile is the value that is a quarter of the way from top to bottom in the ranking of earnings – so a quarter of the people earn above the upper quartile and three quarters earn below the upper quartile.

The lower quartile is the value that is three quarters of the way from top to bottom in the ranking of earnings – so a quarter of the people earn below the lower quartile and three quarters earn above the lower quartile.

Table 19

Median and quartile annual earnings of young domestic graduate certificate and diploma completers, one, two and five years after study by broad field of study,

Field of study	Measure	Years after study		
		One	Two	Five
Agriculture, environmental and related studies	Upper quartile	C..	C..	C..
	Median	\$29,304	\$49,726	C..
	Lower quartile	C..	C..	C..
Creative arts	Upper quartile	\$39,504	\$44,500	\$58,796
	Median	\$35,175	\$38,456	\$45,586
	Lower quartile	\$27,548	\$30,516	\$31,008
Education	Upper quartile	\$48,270	\$50,644	\$64,143
	Median	\$46,203	\$48,068	\$57,327
	Lower quartile	\$41,262	\$43,342	\$43,048
Health	Upper quartile	\$60,733	\$61,172	\$69,805
	Median	\$53,758	\$54,477	\$57,519
	Lower quartile	\$43,354	\$37,674	\$43,326
Information technology	Upper quartile	\$43,761	\$54,752	\$73,168
	Median	\$38,777	\$43,576	\$65,480
	Lower quartile	\$28,961	\$28,614	\$41,921
Management and commerce	Upper quartile	\$48,716	\$56,229	\$75,841
	Median	\$43,606	\$48,656	\$60,456
	Lower quartile	\$37,315	\$42,177	\$45,710
Natural and physical sciences	Upper quartile	\$49,775	C..	C..
	Median	\$42,899	\$50,759	\$48,556
	Lower quartile	\$36,217	C..	C..
Society and culture	Upper quartile	\$57,676	\$71,585	\$93,290
	Median	\$53,476	\$57,675	\$65,841
	Lower quartile	\$44,124	\$44,216	\$48,686
Total students	Upper quartile	\$51,383	\$54,842	\$67,535
	Median	\$46,203	\$48,274	\$57,574
	Lower quartile	\$39,501	\$41,306	\$42,923

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

The median value is the half way point in the ranking of earnings – so half the people earn above the median and half earn below the median.

The upper quartile is the value that is a quarter of the way from top to bottom in the ranking of earnings – so a quarter of the people earn above the upper quartile and three quarters earn below the upper quartile.

The lower quartile is the value that is three quarters of the way from top to bottom in the ranking of earnings – so a quarter of the people earn below the lower quartile and three quarters earn above the lower quartile.

Table 20

Median annual earnings of young domestic graduate certificate and diploma completers, one, two and five years after study, as a percentage of the national median earnings by broad field of study,

Field of study	Years after study %		
	One	Two	Five
Agriculture, environmental and related studies	88	149	C..
Creative arts	106	115	137
Education	139	144	172
Health	161	163	173
Information technology	116	131	197
Management and commerce	131	146	181
Natural and physical sciences	129	152	146
Society and culture	160	173	198
Total students	139	145	173

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 21

Growth in median annual earnings of young domestic graduate certificate and diploma completers, over the first five years after study by broad field of study,

Field of study	Percentage		
	Over the first year	Over the first five years	Average annual growth over the first five years
Agriculture, environmental and related studies	70	C..	C..
Creative arts	9	30	7
Education	4	24	6
Health	1	7	2
Information technology	12	69	14
Management and commerce	12	39	9
Natural and physical sciences	18	13	3
Society and culture	8	23	5
Total students	4	25	6

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 22

Proportion of young domestic graduate certificate and diploma completers who were in New Zealand who were in employment and in further study in the first and fifth years after study by broad field of study,

Field of study	One year after study %		Five years after study %	
	In employment	In further study	In employment	In further study
Agriculture, environmental and related studies	C..	C..	67	8
Creative arts	67	24	77	14
Education	86	11	75	50
Health	64	36	77	15
Information technology	61	28	68	9
Management and commerce	73	20	77	8
Natural and physical sciences	45	45	50	25
Society and culture	75	18	72	12
Total students	78	17	74	12

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

7 OUTCOMES FOR YOUNG BACHELORS DEGREE GRADUATES

7.1 Introduction

This chapter looks at the destinations and earnings of young domestic students who graduated from providers in New Zealand with a bachelors degree.

Bachelors degrees

Each year, around 24,000 students complete a bachelors degree in the New Zealand tertiary education system, about 54 percent of them ‘young’ domestic students, in the way we define that term in this report. Study for a bachelors degree is the most common destination for school leavers who have met the university entrance requirement. Of those who leave school with NCEA level 3, around 70 percent will enter study for a bachelors degree the following year.

The majority of bachelors graduates complete their qualifications at universities, with between 15 and 18 percent completed at polytechnics, 3 percent at wānanga and 4 percent at private training establishments.

Bachelors degrees require graduates to have a field of specialisation with a set of courses at level 7 in that field. Bachelors degrees are offered in most of the broad fields of study – the only broad fields with insufficient young graduates for us to report on in this paper are:

- Food hospitality and personal services
- Mixed field programmes.

People with a bachelors degree work in a wide variety of occupations and industries.

It is important to bear in mind, when reading the analysis below, that we are looking at *broad* fields of study. There are differences between narrow fields of study that are not apparent when we look at data on broad field. Data on outcomes for young bachelors graduates by narrow field can be found in Chapter 11 of this report and in the tables published on the Education Counts website.

7.2 What we found

Earnings

- In the first year after study, the median earnings in 2011 dollars of all young graduates with a bachelors degree was \$39,700. This rose by 12 percent in the following year, and by an average of 6.4 percent a year over the first five years post study, to reach \$50,900.
- Five years post study, the median earnings for the young graduates was 53 percent above the national median earnings for all ages and qualifications.
- The top quarter of young domestic bachelors graduates were earning \$63,400 or more a year, while the lowest quarter earned \$37,600 or less.

- There was substantial variation in earnings by field of study. The three fields with the highest medians five years after completion of study were *health* (\$62,600), *engineering* (\$58,300) and *information technology* (\$57,000). The top quarter of earners among graduates in those fields earned more than \$86,100, \$70,000 and \$71,200 respectively.
- At the other end of the spectrum, *creative arts* bachelors graduates had a median of \$42,600 five years after leaving study, with the top quarter of graduates earning above \$53,400.

Destinations

- Of the bachelors graduates who were in New Zealand in the first year after study, 56 percent were in employment that year and 38 percent in further study.
- Five years after finishing study, 70 percent of the young bachelors graduates who were in New Zealand were in employment and 19 percent in further study.
- The broad field of study with the highest proportion in further study one year after finishing study was *natural and physical of sciences* with 58 percent, while the figure for *society and culture* was 52 percent. After five years, the proportions in further study in these fields were 32 percent and 22 percent respectively.
- The high proportion in further study reflects the fact that many young people move from a bachelors degree to higher level study – an honours degree or other level 8 qualification, or a masters degree. Mostly – but not always – this occurs in the year after completing the bachelors degree.

Figure 10

Median and upper and lower quartile earnings for young domestic bachelors graduates in the first five years after study

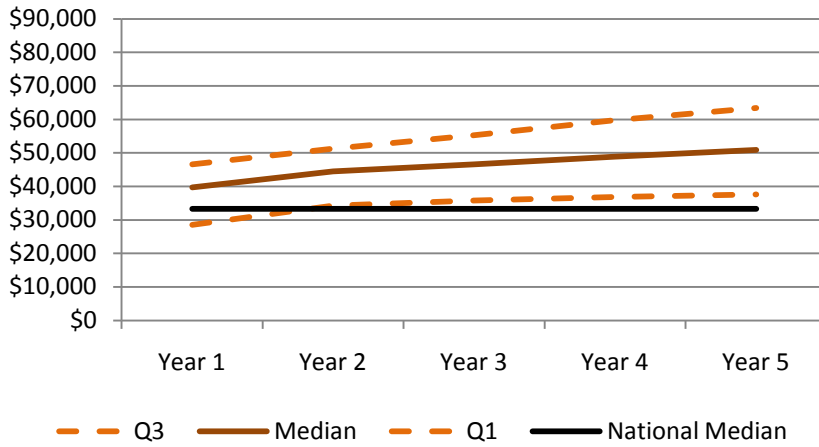
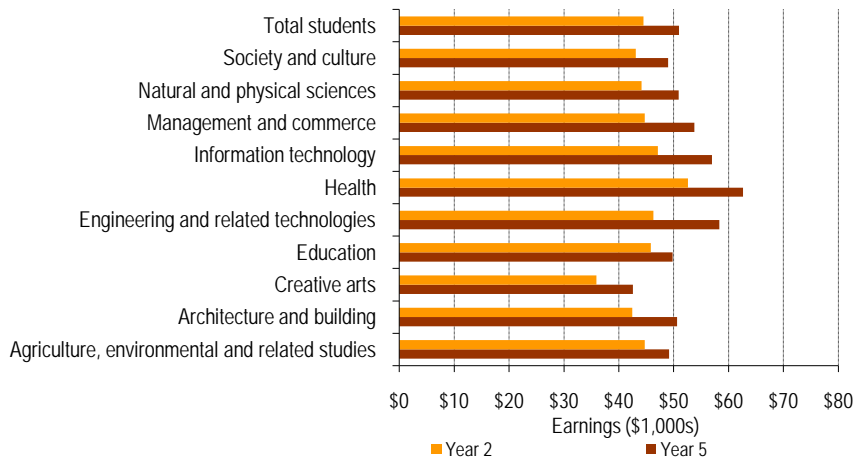


Figure 11

Median earnings of young domestic bachelors graduates two and five years after study



Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

The median value is the half way point in the ranking of earnings – so half the people earn above the median and half earn below the median.

The upper quartile is the value that is a quarter of the way from top to bottom in the ranking of earnings – so a quarter of the people earn above the upper quartile and three quarters earn below the upper quartile.

The lower quartile is the value that is three quarters of the way from top to bottom in the ranking of earnings – so a quarter of the people earn below the lower quartile and three quarters earn above the lower quartile.

Table 23

Median and quartile annual earnings of young domestic bachelors degree graduates, one, two and five years after study by broad field of study,

Field of study	Measure	Years after study		
		One	Two	Five
Agriculture, environmental and related studies	Upper quartile	\$48,063	\$53,197	\$61,559
	Median	\$38,613	\$44,728	\$49,157
	Lower quartile	\$28,148	\$33,036	\$37,224
Architecture and building	Upper quartile	\$46,399	\$50,047	\$62,245
	Median	\$38,806	\$42,458	\$50,597
	Lower quartile	\$28,826	\$35,153	\$39,377
Creative arts	Upper quartile	\$37,489	\$43,792	\$53,398
	Median	\$29,843	\$35,908	\$42,575
	Lower quartile	\$19,900	\$24,846	\$28,800
Education	Upper quartile	\$46,749	\$48,205	\$56,280
	Median	\$44,590	\$45,815	\$49,804
	Lower quartile	\$38,885	\$41,011	\$36,155
Engineering and related technologies	Upper quartile	\$49,830	\$53,878	\$69,975
	Median	\$43,124	\$46,287	\$58,287
	Lower quartile	\$33,273	\$37,422	\$46,716
Health	Upper quartile	\$61,356	\$67,318	\$86,149
	Median	\$47,132	\$52,602	\$62,647
	Lower quartile	\$39,993	\$42,449	\$43,104
Information technology	Upper quartile	\$47,373	\$53,772	\$71,232
	Median	\$41,310	\$47,124	\$56,958
	Lower quartile	\$31,288	\$37,445	\$44,331
Management and commerce	Upper quartile	\$45,690	\$51,670	\$68,014
	Median	\$39,838	\$44,741	\$53,791
	Lower quartile	\$31,061	\$36,891	\$41,373
Natural and physical sciences	Upper quartile	\$44,662	\$51,320	\$61,004
	Median	\$36,874	\$44,137	\$50,897
	Lower quartile	\$26,153	\$34,394	\$39,267
Society and culture	Upper quartile	\$44,488	\$49,730	\$59,961
	Median	\$36,660	\$43,074	\$48,974
	Lower quartile	\$24,629	\$32,349	\$36,212
Total students	Upper quartile	\$46,642	\$51,244	\$63,366
	Median	\$39,701	\$44,474	\$50,938
	Lower quartile	\$28,543	\$34,311	\$37,576

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

The median value is the half way point in the ranking of earnings – so half the people earn above the median and half earn below the median.

The upper quartile is the value that is a quarter of the way from top to bottom in the ranking of earnings – so a quarter of the people earn above the upper quartile and three quarters earn below the upper quartile.

The lower quartile is the value that is three quarters of the way from top to bottom in the ranking of earnings – so a quarter of the people earn below the lower quartile and three quarters earn above the lower quartile.

Table 24

Median annual earnings of young domestic bachelors degree graduates, one, two and five years after study, as a percentage of the national median earnings by broad field of study,

Field of study	Years after study %		
	One	Two	Five
Agriculture, environmental and related studies	116	134	148
Architecture and building	116	127	152
Creative arts	90	108	128
Education	134	137	149
Engineering and related technologies	129	139	175
Health	141	158	188
Information technology	124	141	171
Management and commerce	120	134	161
Natural and physical sciences	111	132	153
Society and culture	110	129	147
Total students	119	133	153

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 25

Growth in median annual earnings of young domestic bachelors degree graduates, over the first five years after study by broad field of study,

Field of study	Percentage		
	Over the first year	Over the first five years	Average annual growth over the first five years
Agriculture, environmental and related studies	16	27	6
Architecture and building	9	30	7
Creative arts	20	43	9
Education	3	12	3
Engineering and related technologies	7	35	8
Health	12	33	7
Information technology	14	38	8
Management and commerce	12	35	8
Natural and physical sciences	20	38	8
Society and culture	17	34	8
Total students	12	28	6

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 26

Proportion of young domestic bachelors degree graduates who were in New Zealand who were in employment and in further study in the first and fifth years after study by broad field of study,

Field of study	One year after study %		Five years after study %	
	In employment	In further study	In employment	In further study
Agriculture, environmental and related studies	53	43	70	21
Architecture and building	58	32	79	9
Creative arts	64	27	71	15
Education	79	18	78	13
Engineering and related technologies	52	43	75	17
Health	68	29	70	21
Information technology	67	23	77	13
Management and commerce	62	32	76	12
Natural and physical sciences	36	58	59	32
Society and culture	43	52	67	22
Total students	56	38	70	19

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

8 OUTCOMES FOR YOUNG DIPLOMA COMPLETERS

8.1 Introduction

This chapter looks at the destinations and earnings of young domestic students who graduated from providers in New Zealand with a diploma at level 5, 6 or 7.

Diplomas

Each year, around 19,000 to 23,000 students complete a diploma in the New Zealand tertiary education system, about 20 percent of them ‘young’ domestic students, in the way we define that term in this report. Around one in ten recent school leavers entering tertiary education for the first time in 2011 undertook study for a diploma. The most common school leaving qualification of that group was NCEA level 2 and over 80 percent had achieved NCEA 2 or higher before leaving school.

The greatest number of diplomas is completed at polytechnics and private training establishments – these two subsectors account for between 80 and 85 percent of all the diploma completions, with around 7 percent completed at wānanga and a similar number at universities.

Diplomas are vocational qualifications that aim to give people practical skills needed in the workforce. Diplomas are offered in all of the broad fields of study – there were no broad fields with insufficient young completers for us to report on in this paper.

It is important to bear in mind, when reading the analysis below, that we are looking at *broad* fields of study. There are differences between narrow fields of study that are not apparent when we look at data on broad field. Data on outcomes by narrow field can be found in the tables published on the Education Counts website.

8.2 What we found

Earnings

- In the first year after study, the median earnings in 2011 dollars of all young diploma completers was \$29,300. This rose by 11 percent in the following year, and by an average of 7.9 percent a year over the first five years post study, to reach \$39,700.
- Five years post study, the median earnings for the young diploma holders was 19 percent above the national median earnings for all ages and qualifications.
- The top quarter of young, domestic diploma holders were earning \$50,000 or more a year five years post study, while the lowest quarter earned \$28,400 or less.
- There was variation in earnings by field of study. The field with the highest median five years after completion of study was *engineering* (\$48,600). The top quarter of earners among engineering diploma holders earned \$61,000 or more five years after leaving study.
- At the other end of the scale, *mixed field programme* diploma graduates had a median of \$28,300 five years after leaving study, with *food, hospitality and personal services* diploma holders having median earnings of \$34,900.

Destinations

- Of the diploma holders who were in New Zealand in the first year after study, 46 percent were in employment that year and 46 percent in further study.
- Five years after finishing study, 64 percent of the young diploma graduates who were in New Zealand were in employment and 24 percent in further study.
- The broad field of study with the highest proportion in further study one year after finishing study was *natural and physical sciences* with 62 percent. After five years, the proportion in further study in that field was 21 percent.

Figure 12

Median and upper and lower quartile earnings for young domestic diploma completers in the first five years after study

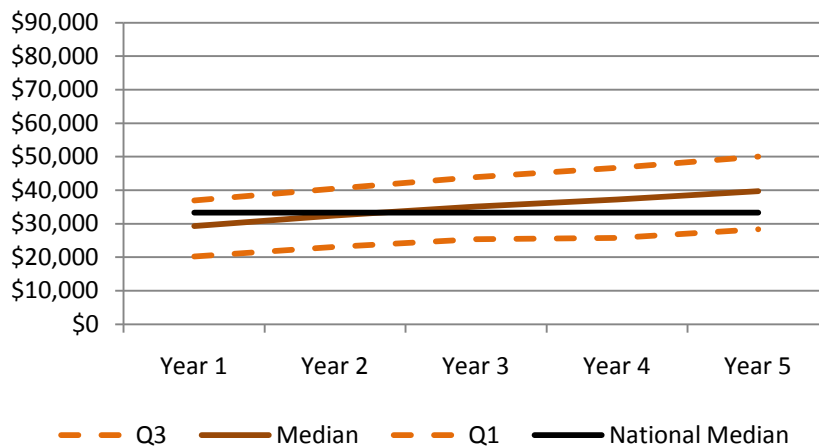
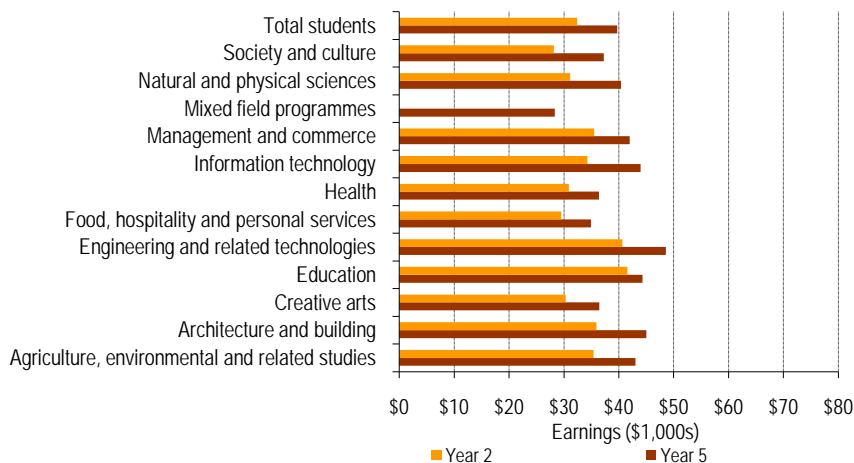


Figure 13

Median earnings of young domestic diploma completers two and five years after study



Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

The median value is the half way point in the ranking of earnings – so half the people earn above the median and half earn below the median.

The upper quartile is the value that is a quarter of the way from top to bottom in the ranking of earnings – so a quarter of the people earn above the upper quartile and three quarters earn below the upper quartile.

The lower quartile is the value that is three quarters of the way from top to bottom in the ranking of earnings – so a quarter of the people earn below the lower quartile and three quarters earn above the lower quartile.

Table 27

Median and quartile annual earnings of young domestic diploma completers, one, two and five years after study by broad field of study,

Field of study	Measure	Years after study		
		One	Two	Five
Agriculture, environmental and related studies	Upper quartile	\$38,761	\$43,769	\$51,317
	Median	\$34,248	\$35,371	\$43,048
	Lower quartile	\$27,381	\$29,153	\$30,911
Architecture and building	Upper quartile	\$40,371	\$43,827	\$55,486
	Median	\$33,626	\$35,926	\$45,031
	Lower quartile	\$29,400	\$29,913	\$35,985
Creative arts	Upper quartile	\$34,082	\$37,374	\$46,441
	Median	\$26,756	\$30,306	\$36,472
	Lower quartile	\$17,433	\$20,894	\$25,464
Education	Upper quartile	\$48,197	\$49,609	\$54,700
	Median	\$42,954	\$41,579	\$44,300
	Lower quartile	\$32,953	\$30,655	\$30,528
Engineering and related technologies	Upper quartile	\$47,242	\$51,032	\$60,948
	Median	\$36,990	\$40,658	\$48,568
	Lower quartile	\$27,129	\$33,103	\$37,422
Food, hospitality and personal services	Upper quartile	\$31,853	\$35,042	\$42,103
	Median	\$25,952	\$29,487	\$34,937
	Lower quartile	\$18,840	\$21,244	\$24,802
Health	Upper quartile	\$34,785	\$37,612	\$45,752
	Median	\$27,739	\$30,884	\$36,369
	Lower quartile	\$19,297	\$20,942	\$26,854
Information technology	Upper quartile	\$38,271	\$42,418	\$56,434
	Median	\$29,798	\$34,293	\$43,943
	Lower quartile	\$20,136	\$25,892	\$33,445
Management and commerce	Upper quartile	\$38,083	\$43,516	\$51,364
	Median	\$31,573	\$35,498	\$42,010
	Lower quartile	\$24,310	\$26,870	\$31,197
Mixed field programmes	Upper quartile	C..	C..	C..
	Median	\$31,412	C..	\$28,343
	Lower quartile	C..	C..	C..
Natural and physical sciences	Upper quartile	\$36,916	\$36,660	\$48,979
	Median	\$29,513	\$31,152	\$40,402
	Lower quartile	\$19,350	\$15,382	\$26,511
Society and culture	Upper quartile	\$33,749	\$39,382	\$47,804
	Median	\$25,467	\$28,153	\$37,234
	Lower quartile	\$16,094	\$18,017	\$25,535
Total students	Upper quartile	\$36,930	\$40,523	\$50,029
	Median	\$29,316	\$32,439	\$39,694
	Lower quartile	\$20,227	\$23,107	\$28,358

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

The median value is the half way point in the ranking of earnings – so half the people earn above the median and half earn below the median.

The upper quartile is the value that is a quarter of the way from top to bottom in the ranking of earnings – so a quarter of the people earn above the upper quartile and three quarters earn below the upper quartile.

The lower quartile is the value that is three quarters of the way from top to bottom in the ranking of earnings – so a quarter of the people earn below the lower quartile and three quarters earn above the lower quartile.

Table 28

Median annual earnings of young domestic diploma completers, one, two and five years after study, as a percentage of the national median earnings by broad field of study,

Field of study	Years after study %		
	One	Two	Five
Agriculture, environmental and related studies	103	106	129
Architecture and building	101	108	135
Creative arts	80	91	109
Education	129	125	133
Engineering and related technologies	111	122	146
Food, hospitality and personal services	78	88	105
Health	83	93	109
Information technology	89	103	132
Management and commerce	95	107	126
Mixed field programmes	94	C..	85
Natural and physical sciences	89	93	121
Society and culture	76	84	112
Total students	88	97	119

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 29

Growth in median annual earnings of young domestic diploma completers, over the first five years after study by broad field of study,

Field of study	Percentage		
	Over the first year	Over the first five years	Average annual growth over the first five years
Agriculture, environmental and related studies	3	26	6
Architecture and building	7	34	8
Creative arts	13	36	8
Education	-3	3	1
Engineering and related technologies	10	31	7
Food, hospitality and personal services	14	35	8
Health	11	31	7
Information technology	15	47	10
Management and commerce	12	33	7
Mixed field programmes	C..	-10	-3
Natural and physical sciences	6	37	8
Society and culture	11	46	10
Total students	11	35	8

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 30

Proportion of young domestic diploma completers who were in New Zealand who were in employment and in further study in the first and fifth years after study by broad field of study,

Field of study	One year after study %		Five years after study %	
	In employment	In further study	In employment	In further study
Agriculture, environmental and related studies	60	35	69	21
Architecture and building	66	30	66	23
Creative arts	45	46	63	23
Education	45	52	70	20
Engineering and related technologies	54	42	68	22
Food, hospitality and personal services	68	23	61	21
Health	48	46	63	27
Information technology	40	48	68	21
Management and commerce	45	47	69	20
Mixed field programmes	C..	C..	57	29
Natural and physical sciences	35	62	63	21
Society and culture	33	60	53	34
Total students	46	46	64	24

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

9 OUTCOMES FOR YOUNG LEVEL 4 CERTIFICATE COMPLETERS

9.1 Introduction

This chapter looks at the destinations and earnings of young domestic students who graduated from providers in New Zealand with a certificate at level 4 on the New Zealand Qualifications Framework.

Level 4 certificates

Each year, around 25,000 students complete a level 4 certificate in the New Zealand tertiary education system, about 20 percent of them ‘young’ domestic students, in the way we define that term in this report. Around one in eight recent school leavers entering tertiary education for the first time in 2011 undertook study for a level 4 certificate. Nearly half that group achieved NCEA level 2 before leaving school and around two-thirds had achieved NCEA at level 2 or 3.

The greatest number of level 4 certificates is completed at polytechnics, wānanga and private training establishments.

Level 4 certificates are mostly vocational qualifications that aim to give people practical skills needed in the workforce. They are offered in all of the broad fields of study.

It is important to bear in mind, when reading the analysis below, that we are looking at *broad* fields of study. There are differences between narrow fields of study that are not apparent when we look at data on broad field. Data on outcomes by narrow field can be found in the tables published on the Education Counts website.

9.2 What we found

Earnings

- In the first year after study, the median earnings in 2011 dollars of all young domestic level 4 certificate completers was \$26,600. This rose by 11 percent in the following year, and by an average of 7.5 percent a year over the first five years post study, to reach \$35,600.
- Five years post study, the median earnings for the young level 4 certificate holders was 7 percent above the national median earnings for all ages and qualifications.
- The top quarter of young domestic level 4 certificate completers were earning \$43,900 or more a year five years post study, while the lowest quarter earned \$25,900 or less.
- There was variation in earnings by field of study. The field with the highest median five years after completion of study was *education* (\$39,800). The top quarter of earners among education diploma holders earned \$46,200 five years after leaving study.
- At the other end of the spectrum, *creative arts* young certificate level 4 holders had median earnings of \$32,600 five years after leaving study, with *food, hospitality and personal services* young level 4 certificate holders having median earnings of \$33,100.

Destinations

- Of the young certificate level 4 holders who were in New Zealand in the first year after study, 40 percent were in employment that year and 50 percent in further study.

- Five years after finishing study, 58 percent of the young certificate level 4 holders who were in New Zealand were in employment and 28 percent in further study.
- The broad field of study with the highest proportion in further study one year after finishing study was *mixed field programmes* with 89 percent. After five years, the proportion in further study in that field was 47 percent.
- The high proportion of those who took *mixed field programmes* who returned to study after completion is a reflection of the orientation of many mixed field certificates – which are intended to provide a pathway to higher levels of study.

Figure 14

Median and upper and lower quartile earnings for young domestic level 4 certificate completers in the first five years after study

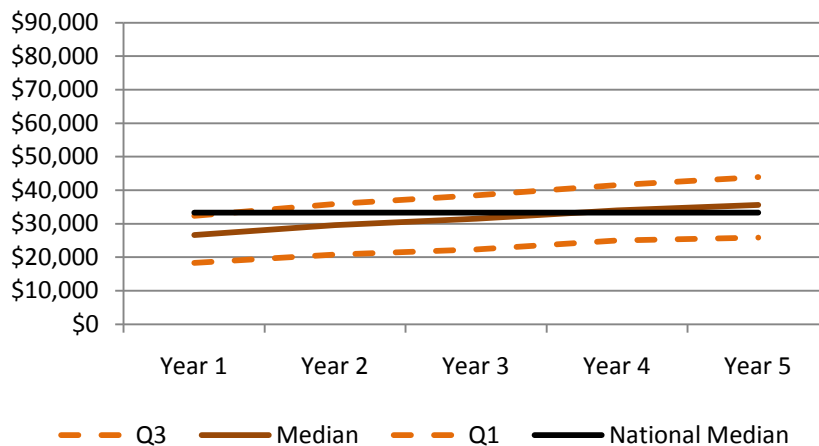
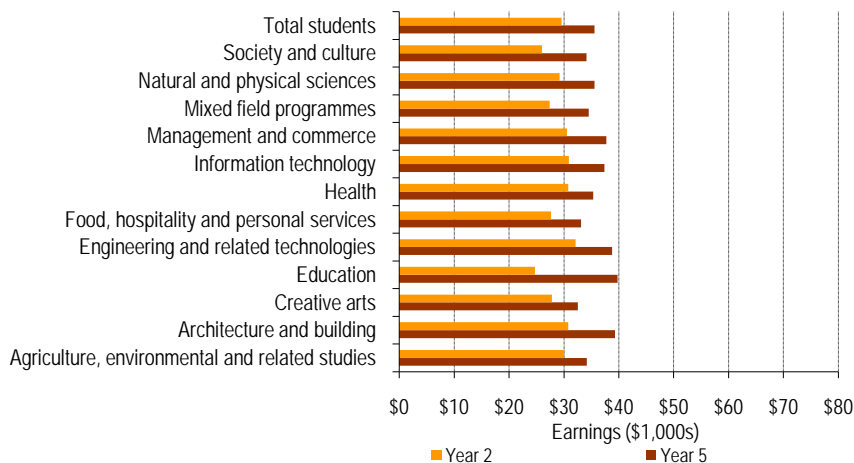


Figure 15

Median earnings of young domestic level 4 certificate completers two and five years after study



Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

The median value is the half way point in the ranking of earnings – so half the people earn above the median and half earn below the median.

The upper quartile is the value that is a quarter of the way from top to bottom in the ranking of earnings – so a quarter of the people earn above the upper quartile and three quarters earn below the upper quartile.

The lower quartile is the value that is three quarters of the way from top to bottom in the ranking of earnings – so a quarter of the people earn below the lower quartile and three quarters earn above the lower quartile.

Table 31

Median and quartile annual earnings of young domestic level 4 certificate completers, one, two and five years after study by broad field of study,

Field of study	Measure	Years after study		
		One	Two	Five
Agriculture, environmental and related studies	Upper quartile	\$33,957	\$37,627	\$43,176
	Median	\$26,450	\$30,021	\$34,167
	Lower quartile	\$17,678	\$18,823	\$22,222
Architecture and building	Upper quartile	\$32,833	\$36,224	\$46,828
	Median	\$28,277	\$30,766	\$39,277
	Lower quartile	\$20,950	\$23,896	\$31,154
Creative arts	Upper quartile	\$29,789	\$34,349	\$40,844
	Median	\$22,445	\$27,819	\$32,564
	Lower quartile	\$13,389	\$17,666	\$24,048
Education	Upper quartile	\$32,569	\$36,568	\$46,241
	Median	\$24,320	\$24,739	\$39,786
	Lower quartile	\$13,731	\$14,558	\$25,637
Engineering and related technologies	Upper quartile	\$33,792	\$41,465	\$46,368
	Median	\$28,014	\$32,122	\$38,768
	Lower quartile	\$19,468	\$25,123	\$25,979
Food, hospitality and personal services	Upper quartile	\$31,274	\$33,879	\$40,399
	Median	\$26,063	\$27,654	\$33,113
	Lower quartile	\$17,247	\$19,763	\$23,224
Health	Upper quartile	\$32,740	\$36,691	\$44,688
	Median	\$26,702	\$30,768	\$35,338
	Lower quartile	\$16,604	\$21,229	\$24,171
Information technology	Upper quartile	\$33,208	\$37,307	\$46,876
	Median	\$27,720	\$30,898	\$37,353
	Lower quartile	\$19,952	\$21,262	\$30,489
Management and commerce	Upper quartile	\$32,587	\$36,578	\$44,881
	Median	\$27,689	\$30,531	\$37,727
	Lower quartile	\$20,914	\$23,831	\$29,537
Mixed field programmes	Upper quartile	\$28,729	\$34,611	\$43,900
	Median	\$21,473	\$27,399	\$34,519
	Lower quartile	\$14,376	\$19,944	\$24,701
Natural and physical sciences	Upper quartile	\$27,674	\$34,474	\$42,996
	Median	\$23,299	\$29,234	\$35,566
	Lower quartile	\$15,612	\$16,459	\$23,390
Society and culture	Upper quartile	\$29,816	\$33,765	\$41,786
	Median	\$21,081	\$25,975	\$34,122
	Lower quartile	\$13,550	\$15,194	\$22,712
Total students	Upper quartile	\$32,354	\$35,910	\$43,936
	Median	\$26,630	\$29,557	\$35,565
	Lower quartile	\$18,342	\$20,815	\$25,881

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

The median value is the half way point in the ranking of earnings – so half the people earn above the median and half earn below the median.

The upper quartile is the value that is a quarter of the way from top to bottom in the ranking of earnings – so a quarter of the people earn above the upper quartile and three quarters earn below the upper quartile.

The lower quartile is the value that is three quarters of the way from top to bottom in the ranking of earnings – so a quarter of the people earn below the lower quartile and three quarters earn above the lower quartile.

Table 32

Median annual earnings of young domestic level 4 certificate completers, one, two and five years after study, as a percentage of the national median earnings by broad field of study,

Field of study	Years after study %		
	One	Two	Five
Agriculture, environmental and related studies	79	90	103
Architecture and building	85	92	118
Creative arts	67	83	98
Education	73	74	119
Engineering and related technologies	84	96	116
Food, hospitality and personal services	78	83	99
Health	80	92	106
Information technology	83	93	112
Management and commerce	83	92	113
Mixed field programmes	64	82	104
Natural and physical sciences	70	88	107
Society and culture	63	78	102
Total students	80	89	107

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 33

Growth in median annual earnings of young domestic level 4 certificate completers, over the first five years after study by broad field of study,

Field of study	Percentage		
	Over the first year	Over the first five years	Average annual growth over the first five years
Agriculture, environmental and related studies	14	29	7
Architecture and building	9	39	9
Creative arts	24	45	10
Education	2	64	13
Engineering and related technologies	15	38	8
Food, hospitality and personal services	6	27	6
Health	15	32	7
Information technology	11	35	8
Management and commerce	10	36	8
Mixed field programmes	28	61	13
Natural and physical sciences	25	53	11
Society and culture	23	62	13
Total students	11	34	8

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 34

Proportion of young domestic level 4 certificate completers who were in New Zealand who were in employment and in further study in the first and fifth years after study by broad field of study,

Field of study	One year after study %		Five years after study %	
	In employment	In further study	In employment	In further study
Agriculture, environmental and related studies	46	29	67	20
Architecture and building	65	25	78	14
Creative arts	21	71	57	29
Education	25	73	48	35
Engineering and related technologies	55	32	60	24
Food, hospitality and personal services	56	32	61	19
Health	28	66	52	37
Information technology	33	60	59	27
Management and commerce	54	35	62	23
Mixed field programmes	8	89	45	47
Natural and physical sciences	10	88	42	47
Society and culture	20	73	49	34
Total students	40	50	58	28

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

10 OUTCOMES FOR YOUNG PEOPLE WHO COMPLETE LEVEL 1-3 CERTIFICATES

10.1 Introduction

This chapter looks at the destinations and earnings of young domestic students who graduated from providers in New Zealand with a certificate at levels 1, 2 or 3 on the New Zealand Qualifications Framework.

Level 1-3 certificates

Each year, around 48,000 students complete a level 1-3 certificate in the New Zealand tertiary education system, about 19 percent of them ‘young’ domestic students, in the way we define that term in this report. Around one in six recent school leavers entering tertiary education for the first time in 2011 undertook study for a level 1-3 certificate at a tertiary education provider⁷. Around half had left school with NCEA level 1 or lower, while about 40 percent had achieved NCEA at level 2.

Around a half of level 1-3 certificates is completed at polytechnics with wānanga and private training establishments accounting for the rest in roughly equal proportions.

While some level 1-3 certificates are vocational qualifications that aim to give people practical skills needed in the workforce, many are foundation qualifications whose purpose is to provide basic and generic skills that can be used in work or as the basis of further, higher level study.

Level 1-3 certificates are offered in most of the broad fields of study – there were no broad fields with insufficient young completers for us to report on in this paper. It is important to bear in mind, when reading the analysis below, that we are looking at *broad* fields of study. There are differences between narrow fields of study that are not apparent when we look at data on broad field. Data on outcomes by narrow field for level 1-3 certificate completers can be found in Chapter 11 of this report and in the tables published on the Education Counts website.

10.2 What we found

Earnings

- In the first year after study, the median earnings in 2011 dollars of all young domestic level 1-3 certificate completers was \$24,800. This rose by 15 percent in the following year, and by an average of 9 percent a year over the first five years post study, to reach \$34,800.
- Five years post study, the median earnings for the young certificate 1-3 completers was 4 percent above the national median earnings for all ages and qualifications.
- The top quarter of young certificate 1-3 completers were earning \$44,100 or more a year, while the lowest quarter earned \$24,800 or less.
- There was variation in earnings by field of study. The field with the highest median five years after completion of study was *natural and physical sciences* (\$43,400). The top quarter of earners among *natural and physical sciences* young certificate 1-3 completers earned \$51,600 five years after leaving study.

⁷ This excludes those in industry training and in Youth Guarantee

- At the other end of the scale, *food, hospitality and personal services* young certificate 1-3 completers had median earnings of \$31,100 five years after leaving study, and *mixed field programs* and *society and culture* certificate holders had median earnings of \$32,600 and \$32,900 respectively.

Destinations

- Of the young certificate 1-3 completers who were in New Zealand in the first year after study, 37 percent were in employment that year and 48 percent in further study.
- Five years after finishing study, 53 percent of the young certificate 1-3 completers who were in New Zealand were in employment and 28 percent in further study.
- The broad field of study with the highest proportion in further study one year after finishing study was *information technology* with 61 percent. After five years, the proportion in further study in that field was 32 percent.
- Many level 1-3 certificates are intended to provide a pathway to higher level study. This orientation is reflected in the high proportions in further study.

Figure 16

Median and upper and lower quartile earnings for young domestic level 1-3 certificate completers in the first five years after study

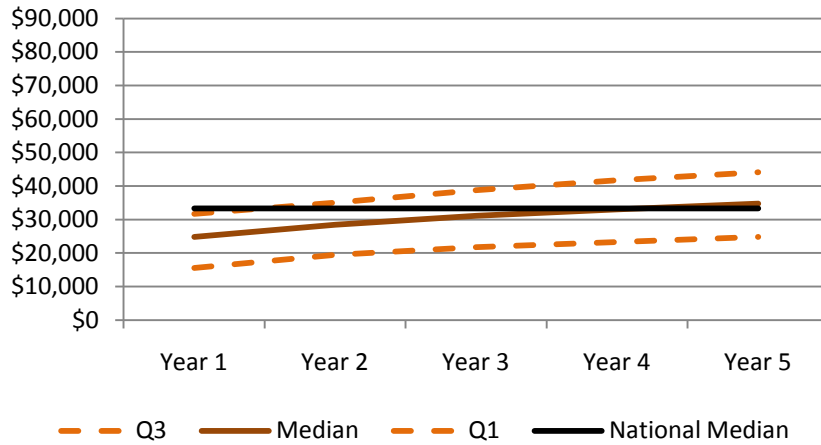
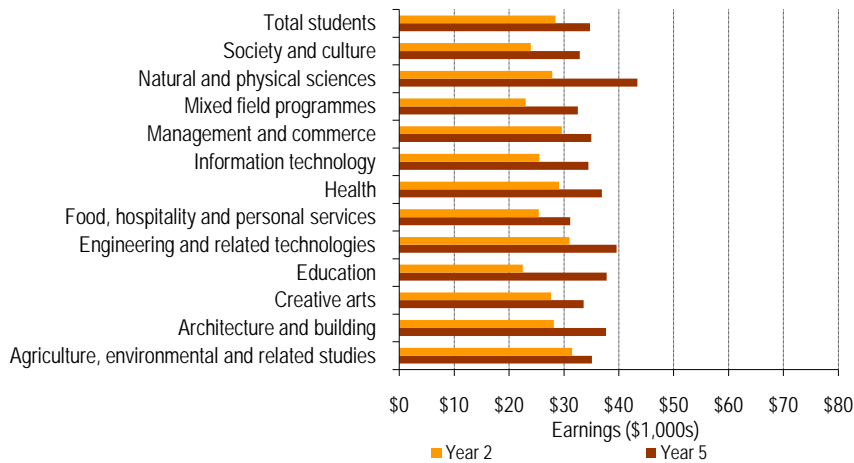


Figure 17

Median earnings of young domestic level 1-3 certificate completers two and five years after study



Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

The median value is the half way point in the ranking of earnings – so half the people earn above the median and half earn below the median.

The upper quartile is the value that is a quarter of the way from top to bottom in the ranking of earnings – so a quarter of the people earn above the upper quartile and three quarters earn below the upper quartile.

The lower quartile is the value that is three quarters of the way from top to bottom in the ranking of earnings – so a quarter of the people earn below the lower quartile and three quarters earn above the lower quartile.

Table 35

Median and quartile annual earnings of young domestic level 1-3 certificate completers, one, two and five years after study by broad field of study,

Field of study	Measure	Years after study		
		One	Two	Five
Agriculture, environmental and related studies	Upper quartile	\$33,954	\$39,017	\$45,033
	Median	\$25,543	\$31,496	\$35,111
	Lower quartile	\$13,216	\$22,644	\$25,901
Architecture and building	Upper quartile	\$31,488	\$35,219	\$47,949
	Median	\$25,964	\$28,154	\$37,660
	Lower quartile	\$18,172	\$20,017	\$30,176
Creative arts	Upper quartile	\$29,866	\$33,725	\$40,902
	Median	\$23,480	\$27,618	\$33,611
	Lower quartile	\$15,055	\$18,780	\$22,944
Education	Upper quartile	\$30,646	\$35,468	\$49,132
	Median	\$22,391	\$22,512	\$37,768
	Lower quartile	\$13,428	\$13,164	\$22,970
Engineering and related technologies	Upper quartile	\$33,961	\$38,196	\$49,195
	Median	\$27,655	\$31,029	\$39,621
	Lower quartile	\$18,841	\$23,872	\$29,409
Food, hospitality and personal services	Upper quartile	\$27,750	\$31,058	\$38,938
	Median	\$21,413	\$25,422	\$31,116
	Lower quartile	\$14,505	\$17,670	\$22,136
Health	Upper quartile	\$35,135	\$36,021	\$46,411
	Median	\$26,460	\$29,107	\$36,890
	Lower quartile	\$17,736	\$18,675	\$26,479
Information technology	Upper quartile	\$30,058	\$33,670	\$44,993
	Median	\$23,951	\$25,564	\$34,483
	Lower quartile	\$15,389	\$16,117	\$26,327
Management and commerce	Upper quartile	\$31,621	\$35,354	\$43,416
	Median	\$26,275	\$29,605	\$34,983
	Lower quartile	\$18,342	\$21,588	\$25,943
Mixed field programmes	Upper quartile	\$28,910	\$31,695	\$41,763
	Median	\$19,358	\$23,027	\$32,562
	Lower quartile	\$10,312	\$14,796	\$20,470
Natural and physical sciences	Upper quartile	\$29,462	\$34,955	\$51,566
	Median	\$24,824	\$27,844	\$43,370
	Lower quartile	\$15,260	\$15,306	\$32,297
Society and culture	Upper quartile	\$28,698	\$32,476	\$42,517
	Median	\$19,943	\$23,969	\$32,903
	Lower quartile	\$12,061	\$15,018	\$21,156
Total students	Upper quartile	\$31,653	\$35,083	\$44,114
	Median	\$24,792	\$28,437	\$34,751
	Lower quartile	\$15,556	\$19,476	\$24,773

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

The median value is the half way point in the ranking of earnings – so half the people earn above the median and half earn below the median.

The upper quartile is the value that is a quarter of the way from top to bottom in the ranking of earnings – so a quarter of the people earn above the upper quartile and three quarters earn below the upper quartile.

The lower quartile is the value that is three quarters of the way from top to bottom in the ranking of earnings – so a quarter of the people earn below the lower quartile and three quarters earn above the lower quartile.

Table 36

Median annual earnings of young domestic level 1-3 certificate completers, one, two and five years after study, as a percentage of the national median earnings by broad field of study,

Field of study	Years after study %		
	One	Two	Five
Agriculture, environmental and related studies	77	95	105
Architecture and building	78	84	113
Creative arts	70	83	101
Education	67	68	113
Engineering and related technologies	83	93	119
Food, hospitality and personal services	64	76	93
Health	79	87	111
Information technology	72	77	103
Management and commerce	79	89	105
Mixed field programmes	58	69	98
Natural and physical sciences	74	84	130
Society and culture	60	72	99
Total students	74	85	104

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 37

Growth in median annual earnings of young domestic level 1-3 certificate completers, over the first five years after study by broad field of study,

Field of study	Percentage		
	Over the first year	Over the first five years	Average annual growth over the first five years
Agriculture, environmental and related studies	23	37	8
Architecture and building	8	45	10
Creative arts	18	43	9
Education	1	69	14
Engineering and related technologies	12	43	9
Food, hospitality and personal services	19	45	10
Health	10	39	9
Information technology	7	44	10
Management and commerce	13	33	7
Mixed field programmes	19	68	14
Natural and physical sciences	12	75	15
Society and culture	20	65	13
Total students	15	40	9

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 38

Proportion of young domestic level 1-3 certificate completers who were in New Zealand who were in employment and in further study in the first and fifth years after study by broad field of study,

Field of study	One year after study %		Five years after study %	
	In employment	In further study	In employment	In further study
Agriculture, environmental and related studies	45	41	60	23
Architecture and building	41	47	65	23
Creative arts	34	55	56	30
Education	C..	C..	51	29
Engineering and related technologies	39	52	60	29
Food, hospitality and personal services	36	47	57	22
Health	39	49	59	26
Information technology	18	61	43	32
Management and commerce	39	44	52	28
Mixed field programmes	21	53	36	33
Natural and physical sciences	C..	C..	51	37
Society and culture	32	53	48	32
Total students	37	48	53	28

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

11 A FOCUS ON OUTCOMES BY NARROW FIELD OF STUDY

11.1 Looking at narrow fields of study

Chapters 3 to 10 of this report present the outcomes for young graduates by broad field of study. A limitation of that approach is that some broad fields are very diverse and include quite different areas of study that may have quite different outcomes.

For instance, the broad field of *health* contains narrow fields of *medicine*, *nursing*, *pharmacy* and *rehabilitation therapies*. The main qualifications for medicine and nursing are bachelors degrees. But to qualify in medicine takes six years of full-time study, while nursing is a three-year degree. The salaries paid to newly qualified doctors are higher than those of newly qualified nurses. And the pathway into study for nursing is different to the pathway to medicine.

The broad field of *society and culture* contains narrow fields of *law*, *economics* and *sport and recreation*. These three narrow fields have quite different outcomes and require different preparation before study.

When we present the analysis by broad field of study, we are averaging out these differences in outcomes. Some people have particular strengths or interests in one narrow field but not another – for instance, a person who is keen to study sports but doesn't have an interest in or the preparatory subjects for economics. So it's useful to look at outcomes by narrow field.

But there are limitations to reporting narrow field outcome information. When we divide up a broad field, we get smaller numbers of young domestic graduates in each narrow field. Sometimes the numbers are too few to give meaningful information; or it may be possible to uncover the person or provider that information belongs to. It is essential we guard against the risk of revealing private information,

In this chapter we present outcomes data by narrow field of study for young domestic graduates who have completed bachelors degrees and level 1-3 certificates – the two biggest levels of study for school leavers who enter a tertiary education provider. Data on outcomes by narrow field in other levels of study is available on the Ministry of Education's Education Counts website www.educationcounts.govt.nz and through the Careers New Zealand website at: www.careers.govt.nz.

11.2 Outcomes by narrow field for bachelors graduates

Earnings

- Young bachelors completers in *medical studies* earned the most five years post study, at \$110,000. These were followed by *dental studies* (\$76,100), *pharmacy* (\$75,100) and *veterinary studies* (\$74,200). These figures were 330 percent, 228 percent, 225 percent and 223 percent of the national median earnings in 2010 respectively.
- At the other end of the spectrum, *performing arts*, *other creative arts* and *visual arts and crafts* young bachelors graduates had the lowest median earnings – \$35,600, \$37,300 and \$38,100 five years after leaving study respectively.
- Young *pharmacy* bachelors graduates had the highest wage growth over the first five years, averaging 16 percent each year after study. Pharmacy graduates' median earnings was relatively low in the first year post study, but by 60 percent in the first year after graduation.

Dental studies graduates had the lowest growth (1 percent a year over the first five years) reflecting high median earnings one year after study (\$73,900).

- Some broad fields had wider variation between narrow fields than others. Comparing wages earned five years after study, *health* varied the most. Five years after study, the median earnings in the highest narrow field in health (*medical studies* at nearly \$110,000) was more than double the lowest (rehabilitation therapies where the median was less than \$47,500).
- The differences in *management and commerce* and *society and culture* were also large. In *society and culture*, graduates in *economics* earned 35 percent above those in *justice and law enforcement*. In *management and commerce*, the narrow field *other management and commerce* had median earnings over 35 percent above the median for *tourism* graduates.
- The least variable were *education, agriculture, environmental and related studies* and *engineering and related technologies*.

Destinations

- There were high employment rates in the first year after study for *pharmacy* (93 percent), *medical studies* and *radiography* (85 percent) and teacher education (84 percent) young bachelors completers.
- Five years after finishing study, 88 percent of *other information technology* and *civil engineering* young bachelors completers who were in New Zealand were in employment, followed by *horticulture and viticulture* (82), *architecture and urban environment* and *teacher education* (79 percent) graduates.
- High levels of further study five years after leaving are indicated for young bachelors graduates in *biological sciences* (36 percent), *chemical sciences* (35 percent), *other natural and physical sciences* (34 percent), *physics and astronomy* (31 percent) and *philosophy and religious studies* (30 percent).

Table 39

Median earnings for young domestic bachelors graduates, one two and five years after study, by narrow field of study

Broad field of study	Narrow field of study	One	Two	Five
Natural and Physical Sciences	Total	\$36,874	\$44,137	\$50,897
	Mathematical Sciences	\$42,200	\$45,996	\$53,624
	Physics and Astronomy	\$42,605	\$45,847	\$53,747
	Chemical Sciences	\$37,522	\$43,706	\$45,135
	Earth Sciences	\$36,614	\$46,013	\$52,597
	Biological Sciences	\$32,525	\$40,143	\$48,421
	Other Natural and Physical Sciences	\$40,425	\$49,274	\$57,645
Information Technology	Total	\$41,310	\$47,124	\$56,958
	Computer Science	\$41,168	\$47,643	\$55,869
	Information Systems	\$41,260	\$46,802	\$57,601
Engineering and Related Technologies	Total	\$43,124	\$46,287	\$58,287
	Manufacturing, Engineering and Technology	C..	\$51,931	\$60,235
	Process and Resources Engineering	\$39,834	\$38,103	\$55,393
	Mechanical and Industrial Engineering and Technology	\$41,256	\$43,019	\$60,373
	Civil Engineering	\$47,315	\$52,284	\$67,653
	Geomatic Engineering	\$45,626	\$47,544	\$53,353
	Electrical and Electronic Engineering and Technology	\$41,961	\$46,329	\$61,379
Architecture and Building	Total	\$38,806	\$42,458	\$50,597
	Architecture and Urban Environment	\$38,005	\$42,303	\$49,413
	Building	\$43,474	\$43,925	\$57,860
Agriculture, Environmental and Related Studies	Total	\$38,613	\$44,728	\$49,157
	Agriculture	\$40,250	\$45,343	\$48,822
	Horticulture and Viticulture	\$37,613	\$38,036	\$48,295
	Forestry Studies	\$46,070	\$48,950	\$50,742
	Environmental Studies	\$36,087	\$48,915	\$50,719
Health	Total	\$47,132	\$52,602	\$62,647
	Medical Studies	\$90,312	\$94,257	\$109,977
	Nursing	\$46,155	\$50,632	\$55,158
	Pharmacy	\$41,268	\$66,177	\$75,124
	Dental Studies	\$73,900	\$68,083	\$76,083
	Veterinary Studies	\$56,279	\$58,851	\$74,166
	Public Health	\$40,830	\$48,652	\$61,545
	Radiography	\$53,457	\$59,553	\$71,370
	Rehabilitation Therapies	\$44,812	\$48,247	\$47,516
	Other Health	\$31,041	\$38,567	\$48,555
Education	Total	\$44,590	\$45,815	\$49,804
	Teacher Education	\$44,760	\$45,840	\$49,923
	Curriculum and Education Studies	\$44,253	\$46,255	\$48,628
Management and Commerce	Total	\$39,838	\$44,741	\$53,791
	Accountancy	\$43,183	\$46,935	\$60,473
	Business and Management	\$39,433	\$44,745	\$52,675
	Sales and Marketing	\$38,334	\$43,153	\$51,416
	Tourism	\$34,818	\$39,569	\$46,956
	Banking, Finance and Related Fields	\$42,118	\$46,942	\$58,774
	Other Management and Commerce	\$40,955	\$44,766	\$63,613
Society and Culture	Total	\$36,660	\$43,074	\$48,974
	Political Science and Policy Studies	\$36,258	\$42,235	\$48,896
	Studies in Human Society	\$34,866	\$40,741	\$47,271
	Human Welfare Studies and Services	\$42,174	\$45,988	\$49,026
	Behavioural Science	\$34,124	\$40,867	\$48,553
	Law	\$43,927	\$48,830	\$56,894
Justice and Law Enforcement	\$35,691	\$41,271	\$42,839	

Broad field of study	Narrow field of study	One	Two	Five
	Language and Literature	\$31,775	\$39,299	\$45,703
	Philosophy and Religious Studies	\$34,376	\$38,707	\$45,894
	Economics and Econometrics	\$40,466	\$47,142	\$57,785
	Sport and Recreation	\$29,723	\$38,402	\$45,676
	Other Society and Culture	\$31,570	\$39,405	\$47,001
Creative Arts	Total	\$29,843	\$35,908	\$42,575
	Performing Arts	\$22,650	\$29,477	\$35,552
	Visual Arts and Crafts	\$25,935	\$30,903	\$38,117
	Graphic and Design Studies	\$29,820	\$35,857	\$42,795
	Communication and Media Studies	\$34,300	\$39,118	\$48,481
	Other Creative Arts	\$25,420	\$30,688	\$37,263

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 40

Median earnings of young domestic bachelors graduates, one, two and five years after study, as a percentage of the national median earnings by narrow field of study,

Broad field of study	Narrow field of study	One %	Two %	Five %
Natural and Physical Sciences	Total	111	132	153
	Mathematical Sciences	127	138	161
	Physics and Astronomy	128	138	161
	Chemical Sciences	113	131	135
	Earth Sciences	110	138	158
	Biological Sciences	98	120	145
	Other Natural and Physical Sciences	121	148	173
Information Technology	Total	124	141	171
	Computer Science	124	143	168
	Information Systems	124	140	173
	Other Information Technology	132	146	190
Engineering and Related Technologies	Total	129	139	175
	Manufacturing, Engineering and Technology	C..	156	181
	Process and Resources Engineering	120	114	166
	Mechanical and Industrial Engineering and Technology	124	129	181
	Civil Engineering	142	157	203
	Geomatic Engineering	137	143	160
	Electrical and Electronic Engineering and Technology	126	139	184
Architecture and Building	Total	116	127	152
	Architecture and Urban Environment	114	127	148
	Building	130	132	174
Agriculture, Environmental and Related Studies	Total	116	134	148
	Agriculture	121	136	147
	Horticulture and Viticulture	113	114	145
	Forestry Studies	138	147	152
	Environmental Studies	108	147	152
Health	Total	141	158	188
	Medical Studies	271	283	330
	Nursing	139	152	166
	Pharmacy	124	199	225
	Dental Studies	222	204	228
	Veterinary Studies	169	177	223
	Public Health	123	146	185
	Radiography	160	179	214
	Rehabilitation Therapies	134	145	143

Broad field of study	Narrow field of study	One %	Two %	Five %
	Other Health	93	116	146
Education	Total	134	137	149
	Teacher Education	134	138	150
	Curriculum and Education Studies	133	139	146
Management and Commerce	Total	120	134	161
	Accountancy	130	141	181
	Business and Management	118	134	158
	Sales and Marketing	115	130	154
	Tourism	104	119	141
	Banking, Finance and Related Fields	126	141	176
	Other Management and Commerce	123	134	191
Society and Culture	Total	110	129	147
	Political Science and Policy Studies	109	127	147
	Studies in Human Society	105	122	142
	Human Welfare Studies and Services	127	138	147
	Behavioural Science	102	123	146
	Law	132	147	171
	Justice and Law Enforcement	107	124	129
	Language and Literature	95	118	137
	Philosophy and Religious Studies	103	116	138
	Economics and Econometrics	121	141	173
	Sport and Recreation	89	115	137
	Other Society and Culture	95	118	141
Creative Arts	Total	90	108	128
	Performing Arts	68	88	107
	Visual Arts and Crafts	78	93	114
	Graphic and Design Studies	89	108	128
	Communication and Media Studies	103	117	145
	Other Creative Arts	76	92	112

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 41

Growth in median annual earnings of young domestic bachelors graduates, over the first five years after study by narrow field

Broad field of study	Narrow field of study	After one year %	After five years %	Average per year %
Natural and Physical Sciences	Total	20	38	8
	Mathematical Sciences	9	27	6
	Physics and Astronomy	8	26	6
	Chemical Sciences	16	20	5
	Earth Sciences	26	44	9
	Biological Sciences	23	49	10
Information Technology	Total	14	38	8
	Computer Science	16	36	8
	Information Systems	13	40	9
	Other Information Technology	10	44	10
Engineering and Related Technologies	Total	7	35	8
	Process and Resources Engineering	-4	39	9
	Mechanical and Industrial Engineering and Technology	4	46	10
	Civil Engineering	11	43	9
	Geomatic Engineering	4	17	4
	Electrical and Electronic Engineering and Technology	10	46	10
Architecture and Building	Total	9	30	7
	Architecture and Urban Environment	11	30	7
	Building	1	33	7
Agriculture, Environmental and Related Studies	Total	16	27	6
	Agriculture	13	21	5
	Horticulture and Viticulture	1	28	6
	Forestry Studies	6	10	2
Health	Environmental Studies	36	41	9
	Total	12	33	7
	Medical Studies	4	22	5
	Nursing	10	20	5
	Pharmacy	60	82	16
	Dental Studies	-8	3	1
	Veterinary Studies	5	32	7
	Public Health	19	51	11
	Radiography	11	34	7
Rehabilitation Therapies	8	6	1	
Education	Other Health	24	56	12
	Total	3	12	3
	Teacher Education	2	12	3
Management and Commerce	Curriculum and Education Studies	5	10	2
	Total	12	35	8
	Accountancy	9	40	9
	Business and Management	13	34	8
	Sales and Marketing	13	34	8
	Tourism	14	35	8
	Banking, Finance and Related Fields	11	40	9
Other Management and Commerce	9	55	12	
Society and Culture	Total	17	34	8
	Political Science and Policy Studies	16	35	8
	Studies in Human Society	17	36	8
	Human Welfare Studies and Services	9	16	4
	Behavioural Science	20	42	9

Broad field of study	Narrow field of study	After one year %	After five years %	Average per year %
	Law	11	30	7
	Justice and Law Enforcement	16	20	5
	Language and Literature	24	44	10
	Philosophy and Religious Studies	13	34	7
	Economics and Econometrics	16	43	9
	Sport and Recreation	29	54	11
	Other Society and Culture	25	49	10
Creative Arts	Total	20	43	9
	Performing Arts	30	57	12
	Visual Arts and Crafts	19	47	10
	Graphic and Design Studies	20	44	9
	Communication and Media Studies	14	41	9
	Other Creative Arts	21	47	10

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 42

Destinations by narrow field of study for young domestic bachelors graduates who remain in New Zealand

Broad field of study	Narrow field of study	Employment %			Further Study %			Benefit %			Other %		
		One	Two	Five	One	Two	Five	One	Two	Five	One	Two	Five
Natural and physical sciences	Total	36	44	59	58	50	32	1	1	2	4	4	8
	Mathematical Sciences	36	53	60	57	42	27	1	C..	1	5	4	11
	Physics and Astronomy	25	34	55	70	60	31	3	C..	3	5	3	7
	Chemical Sciences	26	37	56	69	56	35	2	2	2	3	4	7
	Earth Sciences	35	47	67	56	47	24	1	1	2	7	4	8
	Biological Sciences	31	38	55	64	58	36	1	1	2	4	4	8
	Other Natural and Physical Sciences	59	58	59	37	37	34	1	1	1	3	5	6
Information technology	Total	67	75	77	23	17	13	3	1	1	7	6	9
	Computer Science	62	74	74	27	17	14	4	1	1	8	7	10
	Information Systems	72	75	77	20	18	13	3	2	1	7	5	8
	Other Information Technology	78	82	88	11	7	12	4	4	0	7	7	C..
Engineering and related technologies	Total	52	58	75	43	37	17	2	1	1	2	4	7
	Manufacturing, Engineering and Technology	C..	C..	68	C..	C..	C..	C..	C..	5	C..	C..	14
	Process and Resources Engineering	29	44	63	65	50	25	C..	C..	0	C..	C..	13
	Mechanical and Industrial Engineering and Technology	40	36	72	56	59	17	C..	0	6	C..	C..	C..
	Civil Engineering	62	71	88	31	21	C..	0	0	0	0	7	13
	Geomatic Engineering	62	63	70	37	30	17	C..	C..	0	1	7	9
	Electrical and Electronic Engineering and Technology	52	60	73	42	38	18	4	C..	2	4	4	8
	Other Engineering and Related Technologies	40	67	90	40	33	10	0	0	0	0	0	10
Architecture and building	Total	58	62	79	32	31	9	3	1	4	7	5	9
	Architecture and Urban Environment	56	61	79	33	32	7	3	1	4	8	5	10
	Building	69	70	73	28	30	20	C..	0	C..	3	0	C..
Agriculture, environmental and related studies	Total	53	54	70	43	40	21	1	0	2	3	5	8
	Agriculture	56	57	70	41	37	20	0	C..	C..	2	4	8
	Horticulture and Viticulture	50	62	82	38	31	18	C..	0	C..	6	8	C..
	Forestry Studies	C..	38	50	C..	50	C..	C..	0	0	C..	C..	17
	Environmental Studies	46	50	64	54	46	25	0	C..	4	4	7	7
Health	Total	68	67	70	29	29	21	1	0	1	2	4	8
	Medical Studies	85	66	76	12	29	19	0	0	C..	3	4	4
	Nursing	46	62	72	52	35	20	1	1	1	1	3	8
	Pharmacy	93	85	67	4	13	20	0	0	C..	2	4	11

Broad field of study	Narrow field of study	Employment %			Further Study %			Benefit %			Other %		
		One	Two	Five	One	Two	Five	One	Two	Five	One	Two	Five
	Veterinary Studies	C..	C..	63	C..	C..	22	C..	C..	0	C..	C..	15
	Public Health	40	43	63	60	54	C..	3	0	0	7	4	25
	Radiography	85	78	76	15	20	20	0	0	0	C..	3	8
	Rehabilitation Therapies	84	76	65	15	21	24	C..	0	1	2	3	11
	Other Health	48	51	65	47	44	27	1	C..	1	3	5	8
Education	Total	79	81	78	18	15	13	1	1	1	2	3	7
	Teacher Education	84	85	79	13	12	13	1	1	1	2	2	7
	Curriculum and Education Studies	65	73	75	32	21	16	1	1	1	3	4	8
Management and commerce	Total	62	71	76	32	21	12	1	1	1	5	7	11
	Accountancy	50	71	80	46	21	8	1	1	0	4	7	11
	Business and Management	64	67	76	29	25	15	2	1	1	6	7	9
	Sales and Marketing	70	75	75	23	17	11	2	1	1	5	7	12
	Tourism	69	73	78	28	20	14	C..	C..	2	2	4	8
	Banking, Finance and Related Fields	51	69	71	42	22	11	1	2	1	7	7	18
	Other Management and Commerce	82	83	89	13	11	11	3	0	0	3	6	C..
Society and culture	Total	43	57	67	52	36	22	1	1	2	4	6	9
	Political Science and Policy Studies	33	52	63	62	42	26	2	1	2	3	5	10
	Studies in Human Society	41	53	67	53	40	23	2	2	2	4	5	8
	Human Welfare Studies and Services	64	74	70	33	23	14	0	C..	3	C..	5	14
	Behavioural Science	41	49	60	54	45	29	2	2	2	4	5	9
	Law	40	65	74	55	28	15	0	0	1	4	7	9
	Justice and Law Enforcement	47	71	65	50	18	23	C..	C..	C..	3	9	4
	Librarianship, Information Management and Curatorial Studies	C..	C..	C..	C..	C..	100	0	C..	0	0	C..	0
	Language and Literature	38	51	62	55	40	27	2	2	3	6	7	8
	Philosophy and Religious Studies	34	49	60	60	46	30	4	3	3	3	2	8
	Economics and Econometrics	48	63	74	46	29	15	0	1	2	6	7	10
	Sport and Recreation	57	66	76	39	29	14	2	1	1	3	5	9
	Other Society and Culture	46	61	68	47	29	20	2	1	3	5	7	9
Creative arts	Total	64	69	71	27	21	15	5	4	4	5	6	10
	Performing Arts	47	56	61	43	33	24	6	5	5	4	5	10
	Visual Arts and Crafts	60	63	69	27	24	16	7	6	5	6	7	10
	Graphic and Design Studies	71	75	74	17	15	11	6	3	3	6	7	11
	Communication and Media Studies	67	73	79	28	20	11	2	2	2	3	5	7

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

11.3 Outcomes by narrow field for level 1-3 certificate completers

Earnings

- Young level 1-3 certificate completers in aerospace engineering and technology had the highest median earnings five years post study, at \$55,800. This was followed by *electrical and electronic engineering and technology* (\$45,200), *biological sciences* (\$43,100) and *banking, finance and related fields* (\$41,000). These were 167 percent, 136 percent, 129 percent and 123 percent of the national median earnings in 2010 respectively.
- At the other end of the spectrum, *curriculum and education studies*, *complementary therapies*, *fisheries studies* and *rehabilitation therapies* young level 1-3 certificate

completers had the lowest median of \$24,900, \$26,700, \$27,200 and \$27,800 five years after leaving study respectively.

- *Biological sciences, other education, and social skills programmes* level 1-3 certificate graduates had the highest wage growth trajectory, averaging 19 percent increase each year after study, while *fisheries studies* and *sales and marketing* graduates had the lowest (3 percent).
- Some broad fields had wider variation between narrow fields than others. Comparing wages earned five years after study, *engineering and related technologies* varied in range the most, followed by *education* (43 percentage points) and *management and commerce* (25 percentage points). The least variable were *natural and physical sciences* (6 percentage points) *food, hospitality and personal services* (7 percentage points) and *society and culture* (8 percentage points).

Destinations

- There were high employment rates in the first year after study for *pharmacy* (80 percent), *fisheries studies* and *other education* (67 percent) and *other management and commerce* (62 percent) young level 1-3 certificate completers.
- Five years after finishing study, 78 percent of Aerospace engineering and technology young level 1-3 certificate completers who were in New Zealand were in employment, followed by building (66 percent) and *electrical and electronic engineering and technology* and *philosophy and religious studies* graduates which both had 65 percent employment.
- The proportion in further study five years after study was high for young level 1-3 certificate graduates in *curriculum and education studies* (41 percent), *other education* and *language and literature* (39 percent) and *biological sciences* (38 percent).

Table 43

Median earnings for young level 1-3 certificate completers, one two and five years after study, by narrow field of study

Broad field of study	Narrow field of study	One	Two	Five
Natural and Physical Sciences	Total	\$24,824	\$27,844	\$43,370
	Mathematical Sciences	C..	C..	\$40,957
	Physics and Astronomy	C..	C..	C..
	Chemical Sciences	C..	C..	C..
	Earth Sciences	C..	C..	C..
	Biological Sciences	\$21,268	\$28,473	\$43,135
	Other Natural and Physical Sciences	C..	C..	C..
Information Technology	Total	\$23,951	\$25,564	\$34,483
	Computer Science	\$24,591	\$29,154	\$35,083
	Information Systems	\$20,266	\$24,817	\$33,029
	Other Information Technology	\$27,766	\$25,002	\$37,251
Engineering and Related Technologies	Total	\$27,655	\$31,029	\$39,621
	Manufacturing, Engineering and Technology	\$25,797	\$28,949	\$30,205
	Process and Resources Engineering	\$21,917	\$29,474	\$40,213
	Automotive Engineering and Technology	\$26,263	\$30,743	\$37,542
	Mechanical and Industrial Engineering and Technology	\$28,467	\$30,755	\$40,938
	Civil Engineering	\$33,814	\$40,177	C..
	Electrical and Electronic Engineering and Technology	\$28,430	\$30,945	\$45,164
	Aerospace Engineering and Technology	\$34,370	\$38,342	\$55,762
	Maritime Engineering and Technology	\$22,670	\$28,269	\$31,637
	Other Engineering and Related Technologies	C..	\$28,634	C..
Architecture and Building	Total	\$25,964	\$28,154	\$37,660
	Architecture and Urban Environment	C..	C..	C..
	Building	\$25,964	\$28,199	\$37,660
Agriculture, Environmental and Related Studies	Total	\$25,543	\$31,496	\$35,111
	Agriculture	\$25,853	\$31,920	\$37,137
	Horticulture and Viticulture	\$20,886	\$24,955	\$31,373
	Forestry Studies	\$24,788	\$28,979	\$34,208
	Fisheries Studies	\$24,212	\$28,320	\$27,183
	Environmental Studies	\$28,916	C..	C..
	Other Agriculture, Environmental and Related Studies	\$25,688	\$32,760	\$34,148
Health	Total	\$26,460	\$29,107	\$36,890
	Medical Studies	C..	C..	C..
	Nursing	\$22,963	\$22,995	\$34,413
	Pharmacy	\$25,618	\$31,401	\$34,309
	Veterinary Studies	\$26,729	\$28,272	\$32,946
	Public Health	\$29,428	\$34,045	\$38,854
	Rehabilitation Therapies	C..	C..	\$27,811
	Complementary Therapies	C..	C..	\$26,702
Other Health	\$22,350	\$26,207	\$33,250	
Education	Total	\$22,391	\$22,512	\$37,768
	Teacher Education	\$24,792	\$26,933	\$38,501
	Curriculum and Education Studies	C..	C..	\$24,897
	Other Education	\$19,721	C..	\$39,448
Management and Commerce	Total	\$26,275	\$29,605	\$34,983
	Accountancy	C..	C..	\$35,368
	Business and Management	\$25,697	\$29,752	\$37,709
	Sales and Marketing	\$29,098	\$30,662	\$32,807
	Tourism	\$25,875	\$29,366	\$35,099
	Office Studies	\$25,398	\$29,212	\$34,188
	Banking, Finance and Related Fields	C..	C..	\$40,977
	Other Management and Commerce	\$33,610	\$35,755	\$38,350
Society and Culture	Total	\$19,943	\$23,969	\$32,903
	Political Science and Policy Studies	C..	C..	C..
	Studies in Human Society	\$17,860	\$24,993	C..
	Human Welfare Studies and Services	\$19,493	\$23,334	\$30,595
	Behavioural Science	C..	C..	C..

Broad field of study	Narrow field of study	One	Two	Five
	Law	C..	C..	C..
	Justice and Law Enforcement	C..	C..	C..
	Language and Literature	\$21,339	\$23,003	\$30,217
	Philosophy and Religious Studies	\$24,712	\$31,075	\$34,013
	Economics and Econometrics	C..	C..	C..
	Sport and Recreation	\$18,641	\$24,395	\$34,731
	Other Society and Culture	\$21,864	\$22,252	\$31,550
Creative Arts	Total	\$23,480	\$27,618	\$33,611
	Performing Arts	\$16,720	\$24,351	\$33,230
	Visual Arts and Crafts	\$24,874	\$24,683	\$29,687
	Graphic and Design Studies	\$23,524	\$28,211	\$33,577
	Communication and Media Studies	\$26,114	\$28,855	\$36,931
	Other Creative Arts	C..	C..	C..
Food, hospitality and personal services	Total	\$21,413	\$25,422	\$31,116
	Food and Hospitality	\$21,795	\$26,549	\$32,695
	Personal Services	\$21,185	\$24,432	\$28,465
Mixed field programmes	Total	\$19,358	\$23,027	\$32,562
	General Education Programmes	\$18,540	\$18,997	\$32,529
	Social Skills Programmes	\$18,989	\$27,349	\$37,509
	Employment Skills Programmes	\$21,355	\$30,052	\$31,105

Table 44

Median earnings of young domestic level 1-3 certificate completers, one, two and five years after study, as a percentage of the national median earnings by narrow field of study,

Broad field of study	Narrow field of study	One %	Two %	Five %
Natural and Physical Sciences	Total	74	84	130
	Mathematical Sciences	C..	C..	123
	Physics and Astronomy	C..	C..	C..
	Chemical Sciences	C..	C..	C..
	Earth Sciences	C..	C..	C..
	Biological Sciences	64	85	129
	Other Natural and Physical Sciences	C..	C..	C..
Information Technology	Total	72	77	103
	Computer Science	74	87	105
	Information Systems	61	74	99
	Other Information Technology	83	75	112
Engineering and Related Technologies	Total	83	93	119
	Manufacturing, Engineering and Technology	77	87	91
	Process and Resources Engineering	66	88	121
	Automotive Engineering and Technology	79	92	113
	Mechanical and Industrial Engineering and Technology	85	92	123
	Civil Engineering	101	121	C..
	Electrical and Electronic Engineering and Technology	85	93	136
	Aerospace Engineering and Technology	103	115	167
	Maritime Engineering and Technology	68	85	95
	Other Engineering and Related Technologies	C..	86	C..
Architecture and Building	Total	78	84	113
	Architecture and Urban Environment	C..	C..	C..
	Building	78	85	113
Agriculture, Environmental and Related Studies	Total	77	95	105
	Agriculture	78	96	111
	Horticulture and Viticulture	63	75	94
	Forestry Studies	74	87	103
	Fisheries Studies	73	85	82
	Environmental Studies	87	C..	C..
	Other Agriculture, Environmental and Related Studies	77	98	102
Health	Total	79	87	111
	Medical Studies	C..	C..	C..
	Nursing	69	69	103
	Pharmacy	77	94	103

Broad field of study	Narrow field of study	One %	Two %	Five %
	Veterinary Studies	80	85	99
	Public Health	88	102	117
	Rehabilitation Therapies	C..	C..	83
	Complementary Therapies	C..	C..	80
	Other Health	67	79	100
Education	Total	67	68	113
	Teacher Education	74	81	116
	Curriculum and Education Studies	C..	C..	75
	Other Education	59	C..	118
Management and Commerce	Total	79	89	105
	Accountancy	C..	C..	106
	Business and Management	77	89	113
	Sales and Marketing	87	92	98
	Tourism	78	88	105
	Office Studies	76	88	103
	Banking, Finance and Related Fields	C..	C..	123
	Other Management and Commerce	101	107	115
Society and Culture	Total	60	72	99
	Political Science and Policy Studies	C..	C..	C..
	Studies in Human Society	54	75	C..
	Human Welfare Studies and Services	58	70	92
	Behavioural Science	C..	C..	C..
	Law	C..	C..	C..
	Justice and Law Enforcement	C..	C..	C..
	Language and Literature	64	69	91
	Philosophy and Religious Studies	74	93	102
	Economics and Econometrics	C..	C..	C..
	Sport and Recreation	56	73	104
Other Society and Culture	66	67	95	
Creative Arts	Total	70	83	101
	Performing Arts	50	73	100
	Visual Arts and Crafts	75	74	89
	Graphic and Design Studies	71	85	101
	Communication and Media Studies	78	87	111
	Other Creative Arts	C..	C..	C..
Food, hospitality and personal services	Total	64	76	93
	Food and Hospitality	65	80	98
	Personal Services	64	73	85
Mixed field programmes	Total	58	69	98
	General Education Programmes	56	57	98
	Social Skills Programmes	57	82	113
	Employment Skills Programmes	64	90	93

Table 45

Growth in median annual earnings of young domestic level 1-3 certificate completers, over the first five years after study by narrow field of study.

Broad field of study	Narrow field of study	One %	Two %	Five %
Natural and Physical Sciences	Total	12	75	15
	Biological Sciences	34	103	19
Information Technology	Total	7	44	10
	Computer Science	19	43	9
	Information Systems	22	63	13
	Other Information Technology	-10	34	8
Engineering and Related Technologies	Total	12	43	9
	Manufacturing, Engineering and Technology	12	17	4
	Process and Resources Engineering	34	83	16
	Automotive Engineering and Technology	17	43	9
	Mechanical and Industrial Engineering and Technology	8	44	10
	Civil Engineering	19	C..	C..
	Electrical and Electronic Engineering and Technology	9	59	12
	Aerospace Engineering and Technology	12	62	13

Broad field of study	Narrow field of study	One %	Two %	Five %
	Maritime Engineering and Technology	25	40	9
Architecture and Building	Total	8	45	10
	Building	9	45	10
Agriculture, Environmental and Related Studies	Total	23	37	8
	Agriculture	23	44	9
	Horticulture and Viticulture	19	50	11
	Forestry Studies	17	38	8
	Fisheries Studies	17	12	3
	Other Agriculture, Environmental and Related Studies	28	33	7
Health	Total	10	39	9
	Nursing	0	50	11
	Pharmacy	23	34	8
	Veterinary Studies	6	23	5
	Public Health	16	32	7
	Other Health	17	49	10
Education	Total	1	69	14
	Teacher Education	9	55	12
	Other Education	C..	100	19
Management and Commerce	Total	13	33	7
	Business and Management	16	47	10
	Sales and Marketing	5	13	3
	Tourism	13	36	8
	Office Studies	15	35	8
	Other Management and Commerce	6	14	3
Society and Culture	Total	20	65	13
	Human Welfare Studies and Services	20	57	12
	Language and Literature	8	42	9
	Philosophy and Religious Studies	26	38	8
	Sport and Recreation	31	86	17
	Other Society and Culture	2	44	10
Creative Arts	Total	18	43	9
	Performing Arts	46	99	19
	Visual Arts and Crafts	-1	19	5
	Graphic and Design Studies	20	43	9
	Communication and Media Studies	10	41	9
Food, hospitality and personal services	Total	19	45	10
	Food and Hospitality	22	50	11
	Personal Services	15	34	8
Mixed field programmes	Total	19	68	14
	General Education Programmes	2	75	15
	Social Skills Programmes	44	98	19
	Employment Skills Programmes	41	46	10

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

Table 46

Destinations by narrow field of study for young domestic certificate 1-3 completers who remain in New Zealand

Broad field of study	Narrow field of study	Employment %			Further Study %			Benefit %			Other %		
		One	Two	Five	One	Two	Five	One	Two	Five	One	Two	Five
Natural and physical sciences	Total	C..	32	51	C..	58	37	C..	6	C..	C..	6	9
	Mathematical Sciences	0	0	50	100	100	25	0	0	0	0	0	0
	Physics and Astronomy	C..	C..	C..	C..	C..	C..	C..	0	0	C..	0	0
	Chemical Sciences	C..	C..	C..	67	67	C..	C..	C..	C..	0	C..	C..
	Biological Sciences	25	33	56	75	57	38	0	C..	C..	0	5	0
	Other Natural and Physical Sciences	C..	50	C..	C..	C..	C..	C..	C..	C..	C..	0	C..
Information technology	Total	18	30	43	61	48	32	15	16	18	5	5	7
	Computer Science	C..	40	54	C..	40	32	C..	13	10	C..	C..	4
	Information Systems	15	C..	37	57	C..	32	19	C..	24	8	C..	6
	Other Information Technology	19	35	45	63	46	33	13	12	15	2	5	8
Engineering and related technologies	Total	39	44	60	52	48	29	6	5	7	3	3	5
	Manufacturing, Engineering and Technology	24	43	56	63	50	20	7	5	17	4	4	7

Broad field of study	Narrow field of study	Employment %			Further Study %			Benefit %			Other %		
		One	Two	Five	One	Two	Five	One	Two	Five	One	Two	Five
	Process and Resources Engineering	30	36	61	50	45	28	10	9	6	0	0	6
	Automotive Engineering and Technology	37	40	60	55	53	33	5	5	4	4	3	4
	Mechanical and Industrial Engineering and Technology	34	36	59	55	52	29	8	9	8	4	4	5
	Electrical and Electronic Engineering and Technology	45	51	65	49	45	29	4	3	2	3	1	5
	Aerospace Engineering and Technology	45	70	78	47	26	15	3	C..	C..	6	2	5
	Maritime Engineering and Technology	53	48	46	38	40	28	9	6	19	4	6	7
	Other Engineering and Related Technologies	C..	38	40	C..	50	20	C..	C..	C..	C..	0	20
Architecture and building	Total	41	47	65	47	43	23	5	7	4	7	3	5
	Building	41	47	66	47	42	22	5	8	5	7	3	5
Agriculture, environmental and related studies	Total	45	51	60	41	36	23	6	6	10	8	7	7
	Agriculture	43	52	64	45	39	24	6	6	5	6	3	8
	Horticulture and Viticulture	C..	C..	57	C..	C..	23	C..	C..	9	C..	C..	9
	Forestry Studies	43	52	59	37	25	21	10	11	15	10	11	5
	Fisheries Studies	67	C..	63	22	C..	13	C..	C..	0	0	C..	13
	Environmental Studies	C..	C..	C..	C..	40	C..	C..	C..	C..	C..	C..	C..
Other Agriculture, Environmental and Related Studies	48	51	58	37	34	25	3	4	13	12	10	4	
Health	Total	39	45	59	49	40	26	9	11	7	4	4	8
	Pharmacy	80	C..	54	C..	C..	23	10	C..	8	C..	C..	8
	Veterinary Studies	28	48	54	64	41	26	4	6	9	2	2	11
	Public Health	53	47	63	31	26	24	10	16	4	5	8	9
	Rehabilitation Therapies	50	C..	50	33	C..	25	17	C..	25	C..	C..	C..
	Complementary Therapies	C..	38	53	C..	38	32	C..	C..	16	C..	C..	C..
	Other Health	36	43	54	47	43	29	13	11	9	7	3	9
Education	Total	C..	31	51	C..	60	29	C..	9	13	C..	6	8
	Teacher Education	41	27	54	41	60	21	18	10	13	C..	C..	8
	Curriculum and Education Studies	C..	C..	47	C..	50	41	C..	0	12	C..	C..	C..
	Other Education	67	C..	44	17	C..	39	C..	C..	11	0	C..	11
Management and commerce	Total	39	44	52	44	36	28	12	14	13	5	6	8
	Accountancy	C..	C..	45	33	C..	36	33	C..	27	0	C..	C..
	Business and Management	36	46	52	50	34	29	11	13	9	3	7	10
	Sales and Marketing	42	47	54	44	34	24	9	15	11	5	4	7
	Tourism	50	56	58	37	29	24	10	10	12	3	4	6
	Office Studies	38	40	50	44	39	28	13	15	14	5	6	8
	Other Management and Commerce	62	C..	50	23	C..	33	C..	C..	0	8	C..	8
Society and culture	Total	32	33	48	53	46	32	9	14	11	6	7	9
	Studies in Human Society	28	23	50	50	41	33	14	27	33	10	11	17
	Human Welfare Studies and Services	47	38	48	36	39	30	10	12	13	6	9	11
	Behavioural Science	C..	0	C..	C..	100	C..	C..	0	C..	C..	0	C..
	Language and Literature	20	24	32	64	54	39	10	14	15	7	7	14
	Philosophy and Religious Studies	C..	42	65	C..	58	24	C..	C..	0	C..	C..	18
	Economics and Econometrics	C..	C..	C..	C..	C..	C..	C..	0	C..	C..	0	C..
	Sport and Recreation	31	36	51	61	48	33	4	10	9	5	5	7
Other Society and Culture	44	46	54	30	33	18	15	13	18	7	C..	14	
Creative arts	Total	34	44	56	55	42	30	8	9	8	3	5	7
	Performing Arts	26	36	49	61	48	33	8	8	10	3	6	10
	Visual Arts and Crafts	41	43	57	51	41	27	5	9	10	3	5	7
	Graphic and Design Studies	12	C..	52	77	C..	32	6	C..	5	3	C..	9
	Communication and Media Studies	46	56	63	40	35	30	11	8	5	3	3	4
Food, hospitality	Total	36	53	57	47	29	22	12	14	14	5	5	7

Broad field of study	Narrow field of study	Employment %			Further Study %			Benefit %			Other %		
		One	Two	Five	One	Two	Five	One	Two	Five	One	Two	Five
and personal services	Food and Hospitality	39	57	58	46	27	24	11	11	11	4	5	7
	Personal Services	33	48	54	48	31	19	13	16	19	6	5	8
Mixed field programmes	Total	21	24	36	53	51	33	17	19	23	8	6	8
	General Education Programmes	24	30	42	52	43	33	12	18	18	11	9	7
	Social Skills Programmes	17	19	40	61	65	34	14	14	15	6	5	10
	Employment Skills Programmes	18	27	31	45	36	32	35	36	29	3	4	9

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Refer to Chapter 12 for full notes.

12 DATA AND DEFINITIONS

This project reports on destinations and earnings for young graduates over the first five years after graduates complete a qualification. Results are presented by qualification level and field of study. Technical details of the data used in this project and the associated definitions are provided below.

12.1 Data.

Integrated Data Infrastructure dataset.

The Integrated Data Infrastructure (IDI) dataset was used to obtain the results in this report. This longitudinal dataset is managed by Statistics New Zealand and links together each individual's tertiary education enrolment and completions data to data on:

- earnings (from Inland Revenue)
- welfare benefits (from the Ministry of Social Development)
- border crossings (from Immigration New Zealand).

The tertiary education data in the IDI prototype has been provided by the Ministry of Education and is sourced from the Single Data Return from tertiary providers. The immigration data is derived from passenger manifestos. The earnings data in the IDI prototype is derived from tax data collected by Inland Revenue. Welfare benefits data is derived from data used by the Ministry of Social Development to administer the benefits system.

Confidentiality of data

The results published in this report all comply with the Statistics New Zealand's confidentiality requirements. These include a requirement to use random rounding to base 3 for all counts including those which underlie percentages. Additionally, when publishing employment rates or earnings, the corresponding provider, enterprise and graduate counts for that qualification level X field of study combination must be higher than prescribed limits. Blanks may also be suppressed in line with Statistic New Zealand's confidentiality rules. Results from a single provider are suppressed in all cases.

Random rounding may result in a total not agreeing with the sum of individual items shown in a table. It is important to take this into account when comparing percentages as some variation may simply be due to this factor and not to an underlying trend. For example, if the count for each of the four destinations is 20 (and so 80 in total), then the percentage for a single destination can vary from 22 to 28 merely due to rounding. But if the count for each destination is 100 (and so 400 in total), then the variation is from 24.4 to 25.6. In general, the smaller the count, the greater the variation will occur. How the counts are distributed across destinations also affects the variation.

Cells marked 'C..' throughout this report represent numbers suppressed as not meeting Statistics New Zealand's confidentiality requirements. This includes suppression of blank cells in line with Statistic New Zealand's confidentiality rules.

Disclaimer

The following disclaimer applies to all results obtained using the IDI, including the results in this report:

The IDI is managed under strict confidentiality rules by Statistics New Zealand. These rules protect individual people and businesses from identification.

The data extraction was undertaken while the authors were on secondment to Statistics New Zealand. The results are not official statistics, they have been created for research purposes from the Integrated Data Infrastructure (IDI) prototype managed by Statistics New Zealand. On-going work within Statistics New Zealand to develop the IDI means it will not be possible to exactly reproduce the data presented here.

The results presented in this study are the work of the authors. Statistics New Zealand and the Ministry of Education take no responsibility for any omissions or errors in the information contained here.

Access to the data used in this study was provided by Statistics New Zealand in accordance with security and confidentiality provisions of the Statistics Act 1975. Only people authorised by the Statistics Act 1975 are allowed to see data about a particular person, business or organisation. The results in this report have been confidentialised to protect individual people and businesses from identification.

Careful consideration has been given to the privacy, security and confidentiality issues associated with using administrative data in the IDI prototype. Further detail can be found in the Privacy impact assessment for the Integrated Data Infrastructure available from www.stats.govt.nz.

The results are based in part on tax data supplied by Inland Revenue to Statistics New Zealand under the Tax Administration Act 1994. This tax data must be used only for statistical purposes, and no individual information may be published or disclosed in any other form, or provided to Inland Revenue for administrative or regulatory purposes.

Any person who has had access to the unit-record data has certified that they have been shown, have read, and have understood section 81 of the Tax Administration Act 1994, which relates to secrecy. Any discussion of data limitations or weaknesses is in the context of using the IDI prototype for statistical purposes, and is not related to the data's ability to support Inland Revenue's core operational requirements.

Completions

The analyses and results in this report only relate to students who have completed a qualification that they enrolled in. Enrolments and completions must match by qualification code and level, and provider. Graduates may be included in the results more than once if they have completed a qualification in more than one field of study, or have completed more than one qualification if the qualifications are completed at different levels and/or in different years.

The year that a qualification is completed is assumed to be the last year of enrolment in that qualification. This is because sometimes completions are not recorded in the year that a student actually completes their qualification, for example due to administrative delays or other peculiarities. Completions are excluded in cases where the recorded completion occurs three or more years before the last year of enrolment in that qualification.

Data is aggregated across two leaving cohorts.

The analyses and results in this report are based on aggregated data from two leaving cohorts. Data has been aggregated in order to increase the numbers in the samples and hence, to ensure Statistics New Zealand's confidentiality requirements could be met and to improve statistical quality and robustness.

Cohorts are chosen so that their post-study employment outcomes are always compared in the same economic climate: the 2009 and 2010 tax years. For instance, one year post-study

outcomes are calculated for graduates who completed in 2007 or 2008, and five year post-study outcomes are calculated for graduates who completed in 2003 or 2004.

Domestic students

We report outcomes and earnings for domestic students only, excluding any international students. We do this because we have no information about the prior qualifications, labour market experience or earnings of international students, so we can be less certain of associating outcomes to New Zealand study experiences for international students.

A domestic student is a student who is a New Zealand citizen, or who is a New Zealand permanent resident or Australian citizen and is not residing overseas. In cases where the domestic status changes for a student across years, their status in their last year of enrolment for a qualification is used.

Funding types.

Completions are excluded from the results if the graduate has received any funding for this qualification that suggests that they may have had previous work experience. In particular, this includes qualifications where a graduate has received Skill Enhancement, Industry Training Off Job component, STAR Funding, English for Migrants, Youth Action Training, or Other contracts funding.

12.2 Definitions

Number of years post-study.

The number of years post study are defined using tax years for earnings and all destinations except further study where calendar years are used. Table 48 below shows how the aggregated cohorts align with tax and calendar years for each post study year.

Table 47

Alignment of cohorts with tax and calendar years.

Cohort	Years post study	Calendar year	Tax year
07/08	1	2008/2009	2009/2010
06/07	2	2008/2009	2009/2010
03/04	5	2008/2009	2009/2010

Graduate destinations

The graduate destinations used in this report are:

- Further study
- Benefits
- Employment
- Unknown/Other

Within each leaving cohort, graduates are assigned to only a single destination per year after study using the below business rules. These rules take account of ‘substantiveness’ – how long a graduate is pursuing an activity – and a ‘predominance’ test – what is the ‘main’ activity. Where a graduate meets the criteria for more than one destination, the destination is determined using the order of precedence: Further Study, Benefit, Employment, Unknown/Other.

Results are only determined for graduates who are in New Zealand in any particular year. A graduate is regarded as being in New Zealand if, overall, they are in NZ for longer than three months in that tax year.

Destinations are defined as follows:

- *Further study* – graduates who are not classified as Overseas and do any tertiary study in a calendar year.
- *Benefits* – graduates who are not classified in either the Overseas or Further study categories and who are on a benefit for at least 4 months in a tax year and who are not in employment for a longer time than this.
- *Employment* – graduates who are not classified in any of the above categories and who receive wages and salary, paid parental leave and/or ACC compensation for at least four months or more in a tax year and/or receive any self-employment income.
- *Other* – graduates who do not meet any of the above criteria, or for whom no matching data can be found in the IDI.

Benefit and Unknown/Other destinations combined for postgraduates

Few postgraduates go on a benefit after study. Thus for these graduates, the Benefit category has been merged with the Unknown/other category to reduce the number of values that need to be suppressed due to Statistics New Zealand's confidentiality criteria.

Earnings

All earnings reported are gross earnings and earnings are only presented for graduates for whom we deem employment is their main activity, in each year independently post-graduation. *Earnings* means income from wages, salaries, self-employment, paid parental leave and accident compensation payments. It excludes unearned income such as rents, dividends, interests and transfer payments such as benefits.

We present graduates' actual earnings (rather than annualised earnings) as some types of work by their nature are seasonal or contract based. No account is taken of hours of work and so earnings will be understated for any qualification/field of study where there are significant numbers of young graduates in part-time work.

Adjusting the data for changes in national wage rates

Earnings are scaled using the Labour Cost Index to normalise differences between the 2009 and 2010 tax years and are presented in 2011 dollars.

Additionally, throughout this report, we have compared graduate earnings to the national median earnings for the 2010 calendar year for all workers aged between 15-64 years who have earnings recorded in the IDI, no matter what their qualifications, occupations and hours of work.

Young graduates and qualification level

We report the outcomes only for 'young' graduates. For each qualification level, we set an age range that means we are looking only at those who start that qualification and move to completion before undertaking substantial time in the workforce. We restrict the analysis to young graduates because the aim of the analysis is to support the decision-making of young people. If we mixed the outcomes of young graduates with the outcomes for people who undertake tertiary study after substantial work experience, we would be unable to separate the effects of the qualification from the effects of the work experience.

Young graduates are defined as:

- 21 years or under at certificate level
- 23 years or under at diploma level
- 24 years or under for three-year bachelors degrees, with each year of additional study requirement adding a year to the age cut-off for longer qualifications⁸
- 26 years or under for one year postgraduate study or graduate certificates or diplomas
- 27 years or under for masters
- 29 years or under for doctorate students.

The age of a graduate is based on their age as at 1 July of their last year of enrolment in a qualification.

Field of study

We use the New Zealand Standard Classification of Education (or NZSCED) to classify people's study into various fields of study. NZSCED has three levels of classification – broad field of study, narrow field and detailed field. We determine what field or fields a graduate has pursued by looking at the courses the graduate took while studying and working out what are the predominant fields of study taken. This method uses level of study, field of study, year of study, and study load of each course that a graduate has studied in their last three years of study, usually of the same level as the final year of study or higher, to determine what best constitutes their main field(s) of study – or specialisation(s). It is important to note that this method may give different results to simply using the classification given by the provider.

One consequence of this is that sometimes, less obvious qualifications may be categorised under a particular field of study for some graduates. For example, as expected, Massey University graduates who complete a Bachelor of Veterinary Science are classified under veterinary studies at bachelors level. However, some Bachelor of Agricultural Science and Bachelor of Science graduates at Lincoln University are also included in this field, as are Unitec graduates who complete a Bachelor of Applied Animal Technology. Similarly, under dental studies, at bachelors level we find both University of Otago Bachelor of Dental Surgery graduates and Auckland University of Technology Bachelor of Health Science (Oral Health) graduates.

Most of our analysis is by broad field of study because if we divide our population of graduates too finely, we end up having to suppress more data because it breaches the Statistics New Zealand confidentiality limits.

People graduating in more than one field of study are counted in each of the fields of study. The number of students in each narrow field of study may not sum to the broad field of study total. This is because students can be enrolled in multiple narrow fields of study.

Field of study is broken down into broad fields using the New Zealand Standard Classification of Education (NZSCED⁹):

- Natural and Physical Sciences
- Information Technology
- Engineering and Related Technologies
- Architecture and Building

⁸ For example, 25 years and under for law degrees which are four years long, 26 years and under for architecture degrees which are five years long, and 27 years and under for medical degrees as these are six years long. Qualifications with non-whole numbers of years are rounded to the closest number of whole years (rounding upwards if the length is x and a half years).

⁹ For the structure of NZSCED, refer to: http://www.educationcounts.govt.nz/data-services/collecting-information/code_sets/new_zealand_standard_classification_of_education_nzsced

- Agriculture, Environmental and Related Studies
- Health
- Education
- Management and Commerce
- Society and Culture
- Creative Arts
- Food, Hospitality and Personal Services
- Mixed Field Programmes.

Each broad field of study contains a spread of types of qualifications. For instance, the broad field Health covers *medicine, veterinary science, dentistry, nursing* and qualifications for low level health workers such as nurse-aides. Natural and Physical Sciences covers *mathematical sciences, physics and astronomy, chemical sciences, earth sciences* and *biological sciences*. Data is also published at NZSCED narrow field, where numbers permit. This allows, for instance, separation of law from economics and from social work and separation of medicine from nursing.

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