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Employment outcomes for ECE teaching graduates

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EMPLOYMENT OUTCOMES FOR ECE TEACHING GRADUATES

One of government's priorities is to increase opportunities for children to participate in high-quality early childhood education. One of the strategies being used to improve quality in ECE is to increase the number of ECE qualified teachers. Several government policies are in place to support this.

This report looks at employment outcomes five years post-study for a cohort of graduates who completed their ECE teaching qualification in 2003. The report aims to examine the following questions:

- 1) What is the make-up of ECE teaching graduates in New Zealand?
- 2) What proportion of ECE teaching graduates go on to work in ECE, and how many continue working in ECE?
- 3) How much do ECE teaching graduates earn compared with other similarly qualified graduates new to the labour market?

Understanding the make-up of ECE graduates can help inform questions on demographic and cultural balances in the ECE workforce. Knowing how many ECE teacher graduates enter and remain in ECE and their relative earnings can help identify potential issues in attracting and retaining ECE graduates in the ECE sector.

Key findings

ECE teaching graduates

- Just over 1,000 people completed an approved ECE teaching qualification in 2003; of these, 72 percent completed a diploma and 28 percent completed a bachelors degree.
- ECE teaching graduates were much older relative to other graduates: 63 percent were aged 25 or over, compared with 14 percent for all bachelors or diploma completers in 2003.
- A high proportion of graduates (43 percent) had previously worked in ECE; the majority of these were diploma completers aged 25 or over.
- The two most common types of graduates were those aged under 25 with a diploma and no prior ECE work experience, and those aged 25 to 39 years old with a diploma and with previous ECE work experience. Each made up 17 percent of ECE teaching graduates in 2003.

Post-study employment in ECE

- Eighty-five percent of the 2003 cohort of ECE teaching graduates worked in ECE in New Zealand at some point in the five years after completing their qualification. Seventy-two percent worked in ECE in the first year after completing their qualification.
- Sixty-five percent of graduates were working in ECE five years after completing their qualification, 7 percent were working in other education sectors, 12 percent were working in other non-education sectors, and 16 percent did not earn any taxable income in the New Zealand labour market.
- The decline in employment in the initial years after completing their qualification is consistent with the pattern of decline that occurs for young tertiary graduates in general after completing their qualification.
- The only group where employment increased over the five-year period after study was the group of young diploma graduates (aged under 25) with no prior work experience in ECE.
- Graduates with previous work experience in ECE were more likely than those entering the ECE workforce for the first time to be working in ECE five years after completing their qualification (74 percent compared with 57 percent). In particular, diploma graduates aged 25 and over with previous ECE work experience (27 percent of all graduates) were the most likely to still be working in ECE five years after completing (80 percent).

- Young bachelors degree graduates (which made up 13 percent of all ECE teaching graduates) were the least likely to be working in ECE five years after completing their degree (50 percent compared with 68 percent for young diploma graduates, 68 percent for older bachelors graduates, and 65 percent for all graduates).
- Young ECE teaching graduates were more likely than other similarly qualified young graduates to enter and remain in work in New Zealand post-study. For example, in the first year after completing their qualification, 92 percent of young ECE teaching diploma and degree graduates earned income, compared with 86 percent for all diploma and degree graduates. After five years, the rates were 77 percent and 69 percent respectively.

Post-study earnings in ECE

- To adjust for the effects of age and work experience on earnings, this study looked at earnings only for those aged under 25, with no previous ECE work experience. They were defined as 'young graduates'. This study was not able to look at the impact on earnings for older graduates.
- The median annual earnings of all young ECE teaching graduates employed in ECE were lower than those of young graduates working in other education sectors. Over the five year period following graduation, the median annual earnings of young ECE graduates ranged between 82 and 89 percent of the median earnings of young graduates working in primary and secondary education industries. This difference did not change significantly over the five years of post-study employment covered by this study (April 2004 to March 2009). Five years after graduation, the annual median earnings of all young ECE graduates (diploma and bachelors combined) were 86 percent and 85 percent of those of young graduates working in primary and secondary schools respectively.
- Over all industries (education and non-education), the annual median earnings of young ECE teaching diploma graduates were higher than those of other young diploma graduates, nearly 25 percent after five years. However, the annual median earnings of young ECE teaching bachelors graduates remained on average about 5 to 10 percent lower than those of young bachelors graduates as a whole over the five year period following graduation.
- The annual median earnings of young ECE bachelors graduates working in ECE were initially around 40 percent higher than those with an ECE teaching diploma. However, the earnings of young ECE diploma graduates increased at a faster rate. After five years, the annual median earnings for a young ECE diploma graduate working in ECE were just 2 percent less than those of a young ECE bachelors graduate.
- While pay parity policy changes between ECE teachers and those in schools had been introduced progressively over the period covered in this study, the lower earnings of ECE graduates in this study is, in part, likely to reflect the fact that these changes did not cover the whole ECE sector. The results in this study are also not able to be adjusted for any differences in hours worked. The extent to which teachers in ECE are more likely than primary and secondary teachers to be in part-time employment is also likely to impact on comparisons of annual earnings.

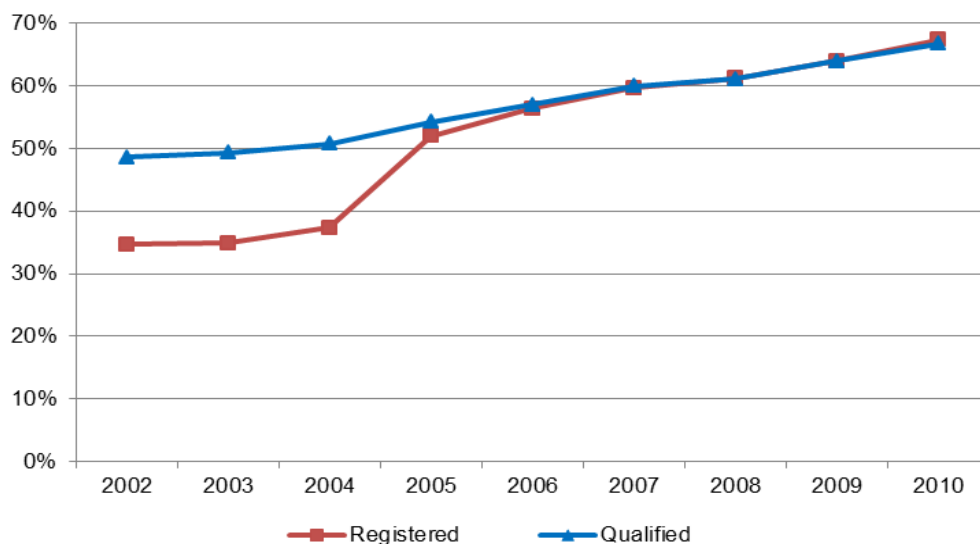
Background

One of the government's priorities is to increase the opportunities for children to participate in high-quality early childhood education. One of the strategies to improve the quality of ECE is to increase the number of ECE qualified teachers in the workforce.

The government has in place a number of mechanisms to support this goal. The current funding system allocates more funding to services with a high proportion of registered teachers. A minimum of 50 percent of the total staff required to meet regulated adult-child ratios must hold an approved ECE teaching qualification. Other initiatives include the ECE incentive grants (or the ECE Service Teacher Education Grant), the recognition of prior learning process (RPL), TeachNZ's ECE Graduate Scholarships, and the ECE Support Grant for Provisionally Registered Teachers (ECE PRT Support Grant)¹.

These moves have seen a significant change in the number of qualified and registered teachers since 2004. Figure 1 shows the percentage of teachers qualified and the percentage of teachers registered in the ECE sector from 2002 to 2010.

Figure 1: Percentage of teachers qualified and percentage of teachers registered, 2002 to 2010



The proportion of teachers who were registered increased significantly in 2005, as a result of the combined impact of the requirement that all 'persons responsible' in ECE be registered and the additional funding incentives introduced in 2005 to support the teacher registration targets implemented in 2007. Before then, many qualified teachers had not taken the additional step of becoming registered.

Aims of this study

This study examines the following questions:

- What is the make-up of ECE teaching graduates in New Zealand (by age, gender, type of qualification and whether the graduates are new to the labour market or have worked in ECE before)?

¹ For more information on these initiatives see <http://www.lead.ece.govt.nz/managementInformation/funding/grants.aspx>

- What proportion of ECE graduates go on to work in ECE, and how many stay working in ECE?
- How much do young ECE teaching graduates entering the labour market in ECE earn compared with other graduates of similar age and level of qualification entering the labour market.

This study does not look at trends or at the nature of the ECE teaching workforce as a whole.

The questions being explored in this study are important because:

- understanding the make-up of ECE graduates can help identify and inform issues related to equity, and demographic or cultural balance in the ECE workforce
- information on the proportion of ECE graduates that are employed in ECE after completing their qualification can be used to identify whether there are issues related to attracting graduates to work in ECE and retaining them over the years
- knowing how young ECE teaching graduates' earnings compare with other similarly qualified graduates working in other industries can also help inform issues related to attracting and retaining qualified ECE teachers in ECE.

This study uses data from the Employment Outcomes of Tertiary Education (EOTE) dataset. This dataset is managed by Statistics New Zealand and links individuals' data on participation and achievement in tertiary education with monthly earnings data from the Linked Employer-Employee Database (LEED). In addition to the earnings data and income from other taxable sources, LEED holds longitudinal employer demographic data regarding the firms they work for.

The EOTE dataset can be used to track employment and earnings for a particular cohort of tertiary students, such as the 2003 ECE teacher graduates. The earliest cohort that can be examined is 2003, and earnings for this group are currently available up to tax year 2009.

The dataset has some limitations. Since it does not hold information on occupation or hours worked, we are not able to identify full-time workers, or earnings from those working part-time, and cannot measure either annual salaries or hourly wages. Earnings data represents actual taxable earnings regardless of hours worked, and is used to infer employment status and hence employment rates. Employment status and rates are not directly held in the data. Industry of employment can be used in some cases as a broad proxy for occupation. EOTE currently does not hold information before 2000 on earnings. For middle-aged and older tertiary students, we are not able to determine how many years of work experience they have had, and we are not usually able to determine their employment and earnings status before their latest period of tertiary study. EOTE also does not hold information on previous highest qualification attained.

For more information on the EOTE dataset, see Scott (2009) and Statistics New Zealand (2009a, 2009b). The key definitions used in this paper are described in more detail in the Appendix.

What is the make-up of ECE teaching graduates in New Zealand?

Teacher education providers offer various levels of teaching qualifications, ranging from level 4 (certificates) to level 9 (masters degrees). For the purposes of this study, the focus is on domestic students that completed an ECE teaching qualification in 2003 approved by the New Zealand Teachers Council (NZTC)². Only graduates with these qualifications are entitled to seek teacher registration from the New Zealand Teachers Council. The Appendix has the list of ECE teaching qualifications and the tertiary education providers accredited to offer these qualifications for 2003. This list includes diploma and bachelors level qualifications only.

The choice of 2003 as the year of completion for this study was largely determined by what was available in the data. The latest year fully available in LEED at the time of the analysis was tax year 2009. Therefore for those that completed their qualification in 2003, there will be up to five years of post-study employment data available. Choosing later leaving cohorts is possible but reduces the number of post-study years available for analysis.

In 2003, around 1,030 domestic students completed an ECE teaching qualification approved by the NZTC. Table 1 shows the demographic and study-related characteristics of this cohort. For convenience, we refer to these graduates in this report as the 'ECE cohort'.

Table 1: ECE teaching qualification graduates in 2003 (ECE cohort)

Characteristic	Number	Percent
ECE teaching qualification		
Diploma	740	72%
Bachelors	290	28%
Age group		
Under 25	380	37%
25-39	370	36%
40 and over	280	27%
Ethnic group		
European	780	75%
Māori	40	4%
Pasifika	90	9%
Asian	80	8%
Other	40	4%
Gender		
Female	1,010	98%
Male	20	2%
Total number of students completing in 2003	1,030	100%

Diploma graduates made up 72 percent of the cohort, while 28 percent of students completed a bachelors degree. Twenty-two of the 30 approved ECE teaching qualifications in 2003 were diplomas and eight were bachelors degrees.

Around 37 percent of the graduates were under the age of 25, 36 percent were aged between 25 and 39, and 27 percent were aged 40 and over. ECE teacher graduates were relatively older compared with other tertiary graduates. Nearly two-thirds were 25 and over, compared with 14 percent of students completing a diploma or bachelors degree in 2003.

² This means the qualifications have been through the NZTC's full approval and accreditation process. 'Approved' is also used interchangeably with the word 'recognised'.

Graduates were predominantly female (98 percent) compared with 62 percent for all diploma and bachelors graduates in 2003. Three-quarters were European, 4 percent were Māori, 9 percent were Pasifika, 8 percent Asian and the remaining 3 percent were in other ethnic groups. Compared with both the general Māori population and the population of all 2003 tertiary graduates, Māori were noticeably under-represented.

A certain percentage of the cohort in this study is expected to have previous work experience in the ECE sector. Some of the entry requirements in the 2003 TeachNZ ECE Teacher Education Qualification booklet indicated that many of the teaching programmes were designed for individuals with previous or current work experience in the ECE sector. This included students already working in a licensed and chartered early childhood education centre in either a paid or voluntary capacity; those undertaking the diploma via distance learning at their own pace while working part-time at their own licensed ECE services; workers in the ECE services wanting to up-skill to the diploma teaching qualification; and older students who had been working in an ECE service for a certain number of hours per week at the time of entry.

The ability to distinguish between employment outcomes of graduates entering the labour market for the first time and those of graduates who already have some relevant work experience and were 'up-skilling' is important for understanding questions of attraction and retention in ECE.

With the current availability of data in the EOTE dataset, it is not possible to accurately determine whether a graduate has worked in the ECE sector in the past. However, we can approximate it by looking at their work experience for the years that are available. For this study, we were able to group graduates into those that had earnings from employment in the ECE industry³ in the previous four years (2000 to 2003) and those that had none.

Table 2 and Figure 2 show the number and percent of the 2003 ECE cohort by age group and whether they worked in ECE in the four years prior to completing their qualification.

Table 2: ECE cohort by qualification, age group, and whether or not have worked in ECE between 2000 and 2003

ECE teaching qualification	Age group	Worked in ECE (2000-2003)		Total	Worked in ECE (2000-2003)		Total
		No	Yes		No	Yes	
Diploma	Under 25	180	80	260	17%	8%	25%
	25-39	100	180	280	10%	17%	27%
	40 and over	110	100	210	11%	10%	21%
	All ages	380	360	740	37%	35%	72%
Bachelors	Under 25	100	30	130	10%	3%	13%
	25-39	60	30	90	6%	3%	9%
	40 and over	50	20	70	5%	2%	7%
	All ages	210	80	290	20%	8%	28%
Total	Under 25	280	110	390	27%	11%	38%
	25-39	160	210	370	16%	20%	36%
	40 and over	160	120	280	16%	12%	28%
	All ages	590	440	1,030	57%	43%	100%

Around 43 percent of the cohort worked in ECE between 2000 and 2003. Of the 72 percent that were diploma graduates, half had previously worked in ECE, while the remaining half were graduates likely to be new to the labour market. This reflects the fact that certain ECE

³ The industry groupings are based on the 2006 Australian and New Zealand Standard Industrial Classification (ANZSIC06). The ANZSIC06 codes P801000 (Preschool Education) and Q871000 (Child care services) were used to identify ECE. Earnings relate to taxable income from wages and salaries or self-employment. Note that this definition excludes those that worked in the ECE sector but on a voluntary basis.

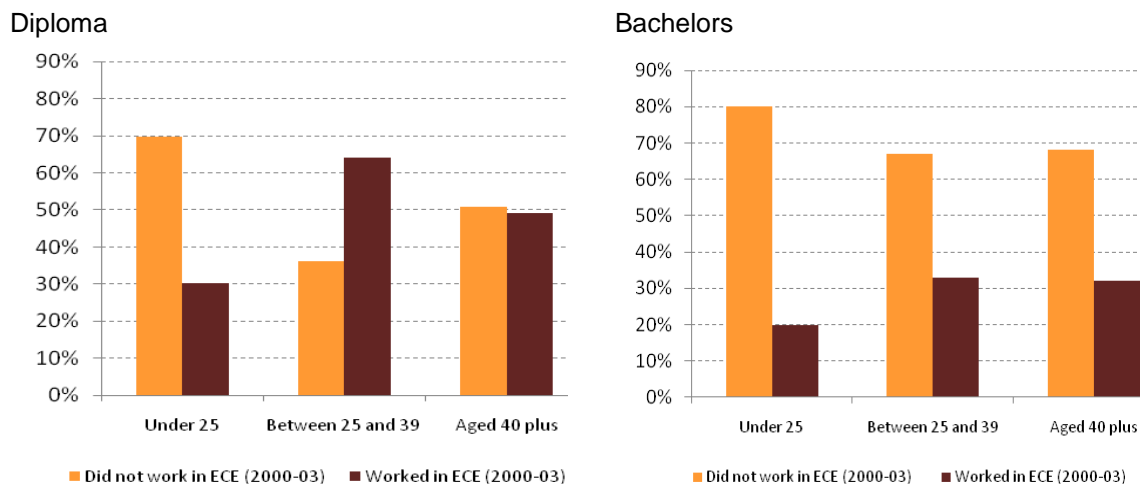
teaching programmes were designed for staff already working in the sector wanting to up-skill to a diploma in teaching. Bachelors graduates were less likely than those with a diploma to have previous work experience in ECE.

Older graduates were more likely to have previous work experience in ECE. Almost 60 percent of 25 to 39 year-olds and half of those aged 40 and over had previously worked in the sector, compared with a quarter of those under 25. Older graduates were also more likely to complete a diploma than a bachelors teaching qualification.

Just over a quarter (27 percent) of ECE teaching graduates were aged under 25, with no previous ECE work experience. Ten percent completed a degree, while 17 percent completed a diploma.

The two most common types of graduates were those under 25 with a diploma and no prior ECE work experience, and those aged 25 to 39 years with a diploma and with previous ECE work experience. Each made up 17 percent of ECE teaching graduates in 2003.

Figure 2: 2003 ECE cohort by qualification level, age group and whether have previously worked in ECE between 2000 and 2003



Post-study employment

The EOTE dataset allows us to track employment and earnings for the 2003 ECE cohort up to five years post-study. For this report, an individual was considered to be employed if they received earnings from wages and salaries or from self-employment in a particular tax year. Table 3 shows a breakdown of the cohort and how many earned taxable income in the five years after completing their qualification by whether they had previous ECE work experience or not.

Knowing how many graduates enter and stay in their studied profession versus choosing another career path will help inform policy questions around ECE teacher supply and issues related to attracting and retaining ECE graduates in ECE.

Table 3: Earnings status of the ECE cohort, tax years 2005 to 2009

Students	Worked in ECE (2000-2003)		Did not work in ECE (2000-2003)		Total	
	Number	Percent	Number	Percent	Number	Percent
Students that completed an ECE qualification in 2003	590	100%	440	100%	1,030	100%
Students matched to LEED (tax years 2005-2009)	560	94%	440	100%	1,000	97%
Number who earned income in tax year 2005	540	91%	430	99%	970	94%
Number who earned income in tax year 2006	520	88%	420	97%	940	91%
Number who earned income in tax year 2007	510	85%	410	93%	920	89%
Number who earned income in tax year 2008	490	83%	390	89%	880	85%
Number who earned income in tax year 2009	470	80%	390	89%	860	84%

Around 97 percent of the 2003 ECE cohort received taxable income in New Zealand at some point in the five years after completing their teaching qualification. However, there is a gradual drop each year, from 94 percent in the first year post-study to 84 percent in the fifth year post-study. The pattern of falling employment, especially for younger graduates, in the first years after completing a tertiary qualification has been identified in previous research (Scott, 2009). This may, in part, reflect travelling overseas or taking time out of the labour market to raise a family. In time, the EOTE dataset will show the longer-term nature of this trend.

Table 4 compares the percentage of ECE teaching graduates who earned income in the years following graduation with other similarly qualified graduates from 2003. To partially adjust for differences in age and level of work experience amongst different tertiary graduates, rates are compared for those diploma and bachelors graduates aged under 25, which we call “young graduates”. For Table 4, it was not possible to provide comparable information for primary or secondary teaching graduates working in primary or secondary education industries, hence a comparison is made for all graduates working in any industry.

Additional care is needed in interpreting these rates as they do not adjust for number of hours worked during the year. These rates reflect earnings in the New Zealand labour market. Those not earning can therefore include those unemployed, not in the labour force as well as those overseas.

With these limitations, Table 4 shows that ECE teaching graduates were more likely to earn income post-study than other young graduates with a similar level of qualification, at least in the New Zealand labour market. For example, in the first year after completing their qualification, 92 percent of young ECE teaching diploma and degree graduates earned income, compared with 86 percent for all diploma and degree graduates. After five years, the rates were 77 percent and 69 percent respectively. Differences were larger for diploma graduates and smaller for bachelors graduates.

Table 4: Percent of young ECE teaching graduates earning income compared with other graduates from 2003

Type of graduate	One year post-study (Tax-year 2005)	Two years post-study (Tax-year 2006)	Three years post-study (Tax-year 2007)	Four years post-study (Tax-year 2008)	Five years post-study (Tax-year 2009)
Young diploma graduates					
ECE teaching diploma graduates working anywhere	88%	88%	85%	81%	81%
Any diploma graduate working anywhere	78%	79%	77%	74%	69%
Young bachelors graduates					
ECE teaching degree graduates working anywhere	92%	92%	85%	85%	69%
Any bachelors graduate working anywhere	90%	84%	79%	74%	69%
Young diploma and bachelors graduates combined					
ECE teaching diploma and degree graduates working anywhere	92%	90%	85%	79%	77%
Any diploma or degree graduate working anywhere	86%	83%	79%	74%	69%

Table 5 shows the proportion of the ECE cohort (of any age) that worked in ECE one to five years post-study. Eighty-five percent of all 2003 ECE teaching graduates worked in ECE at some point in the five years after completing their qualification. One year after completing their ECE teaching qualification, 72 percent of graduates were employed in ECE. This declined each year to 65 percent five years post-study.

The only group where employment increased over time was the group of diploma graduates under 25 with no previous work experience in ECE. It is likely that some of these graduates started employment in other industries before working in ECE in later years.

Graduates with previous ECE work experience were more likely than those entering the ECE workforce for the first time to work in ECE after completing their qualification (89 percent compared with 58 percent). They were more likely to be still working in ECE five years later (74 percent compared with 57 percent). It is likely that many of those with previous ECE work experience had continued working in ECE during study and continued to be employed after completing their qualification.

In particular, diploma graduates aged 25 and over with previous ECE work experience (27 percent of all graduates) were the most likely to still be working in ECE five years after completing (80 percent).

Regardless of previous ECE work experience or age, diploma graduates were more likely than bachelors graduates to work in ECE after completing, and still be working in ECE five years later (68 percent compared with 56 percent).

Young bachelors graduates (who made up 13 percent of all graduates) were the least likely to be working in ECE five years after completing their degree (50 percent compared with 68 percent for young diploma graduates, and 65 percent for all graduates).

Table 5: Employment rates for the 2003 ECE cohort, one to five years post-study

Qualification	Age group	Worked in ECE (2000 - 2003)	Total	One year post-study	Two years post-study	Three years post-study	Four years post-study	Five years post-study	Percentage point change between first and fifth year post-study
Diploma	Under 25	No	180	53%	66%	69%	67%	65%	12%
		Yes	80	89%	84%	75%	66%	66%	-23%
		All	260	67%	74%	74%	69%	68%	1%
	25-39	No	100	54%	46%	50%	45%	48%	-6%
		Yes	180	93%	89%	83%	79%	81%	-12%
		All	280	79%	74%	71%	67%	69%	-10%
	40 and over	No	110	51%	51%	50%	52%	56%	5%
		Yes	100	94%	89%	85%	80%	80%	-14%
		All	210	71%	69%	67%	65%	68%	-4%
	All ages	No	380	54%	58%	61%	58%	60%	6%
		Yes	360	92%	88%	82%	76%	78%	-15%
		All	740	73%	73%	71%	67%	68%	-4%
Bachelors	Under 25	No	100	76%	72%	63%	61%	54%	-22%
		Yes	30	60%	57%	47%	50%	37%	-23%
		All	130	72%	68%	59%	58%	50%	-22%
	25-39	No	60	67%	65%	67%	63%	67%	0%
		Yes	30	73%	73%	67%	57%	70%	-3%
		All	90	69%	68%	67%	61%	68%	-1%
	40 and over	No	50	54%	56%	50%	48%	46%	-8%
		Yes	20	90%	85%	85%	80%	70%	-20%
		All	70	64%	64%	60%	57%	53%	-11%
	All ages	No	210	68%	66%	61%	59%	56%	-12%
		Yes	80	73%	70%	64%	60%	58%	-15%
		All	290	69%	67%	62%	59%	56%	-13%
All	Under 25	No	280	61%	68%	67%	65%	61%	0%
		Yes	110	81%	76%	67%	62%	58%	-23%
		All	390	69%	72%	69%	66%	62%	-7%
	25-39	No	160	59%	53%	56%	52%	55%	-4%
		Yes	210	90%	87%	80%	76%	80%	-10%
		All	370	76%	72%	70%	65%	69%	-8%
	40 and over	No	160	52%	53%	50%	51%	53%	1%
		Yes	120	93%	88%	85%	80%	78%	-15%
		All	280	70%	68%	65%	63%	64%	-6%
	All ages	No	600	58%	60%	60%	58%	57%	-1%
		Yes	440	89%	85%	78%	73%	74%	-15%
		All	1,030	72%	71%	68%	65%	65%	-7%

Table 6 shows a breakdown of the ECE cohort by their post-study employment profile in ECE across the first five years after completing their qualification.

Almost half (47 percent) were employed in ECE in all five years after completing their teaching qualification. Those with previous work experience in the sector were more likely to have worked all five years in ECE than graduates entering the ECE workforce for the first time (62 percent compared with 36 percent). As discussed earlier, some would have been working part-time in the sector while completing their qualifications.

The second largest group (20 percent) was those that started employment in ECE but left in subsequent years. This included a quarter of the graduates aged under 25. When comparing across similar age groups and whether they had previous ECE work experience or not,

bachelors graduates were more likely than diploma graduates to leave the ECE workforce in subsequent years (25 percent compared with 18 percent).

Around 11 percent of ECE teaching graduates started work elsewhere before going to ECE. Forty-one percent of this group were diploma graduates with no previous work experience in the sector. This is the only group where employment in ECE increased over time.

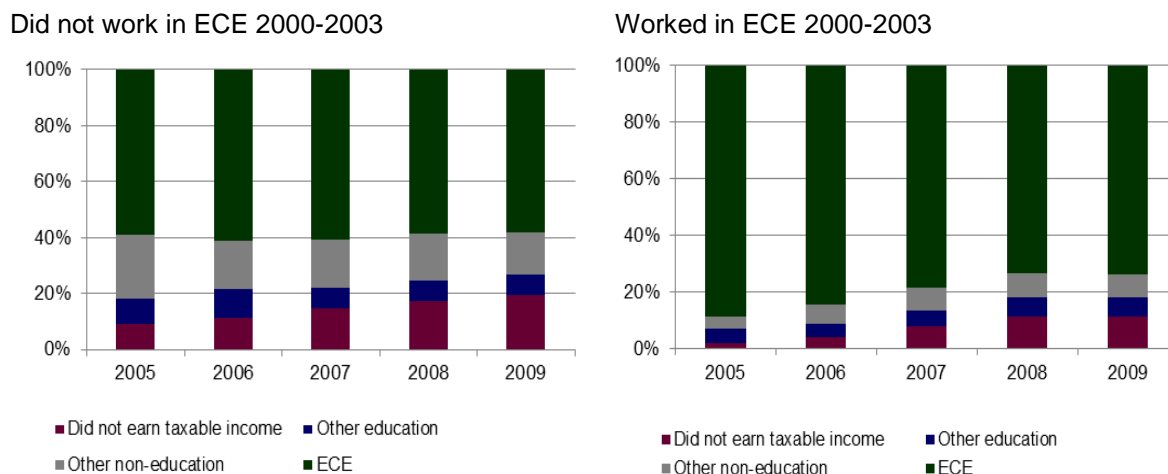
Of those that never worked in ECE (15 percent), 84 percent were graduates with no previous ECE work experience. Fifty-eight percent were diploma graduates and 26 percent were bachelors graduates.

Table 6: Five-year post-study employment patterns for the 2003 ECE cohort

Qualification	Age group	Worked in ECE 2000 - 2003	Total	Worked all five years in ECE	Did not work in ECE in all five years	Worked in ECE but eventually left	Worked elsewhere before ECE	Worked in ECE but took breaks
Diploma	Under 25	No	180	37%	15%	18%	26%	4%
		Yes	80	53%	0%	30%	4%	13%
		All	260	42%	10%	22%	19%	7%
	25-39	No	100	27%	29%	24%	14%	6%
		Yes	180	69%	4%	15%	3%	9%
		All	280	54%	13%	18%	7%	8%
	40 and over	No	110	37%	30%	12%	16%	5%
		Yes	100	70%	6%	17%	2%	6%
		All	210	53%	18%	14%	9%	5%
	All ages	No	380	35%	23%	18%	20%	5%
		Yes	360	66%	4%	19%	3%	9%
		All	740	50%	14%	18%	12%	7%
Bachelors	Under 25	No	100	40%	16%	31%	6%	8%
		Yes	30	36%	20%	36%	4%	4%
		All	130	39%	17%	32%	6%	7%
	25-39	No	60	49%	17%	15%	14%	5%
		Yes	30	48%	10%	17%	14%	10%
		All	90	49%	15%	16%	14%	7%
	40 and over	No	50	29%	27%	27%	12%	6%
		Yes	20	61%	17%	22%	0%	0%
		All	70	39%	24%	25%	8%	4%
	All ages	No	210	40%	19%	25%	10%	7%
		Yes	80	48%	16%	25%	6%	5%
		All	290	42%	18%	25%	9%	6%
All	Under 25	No	280	38%	15%	23%	18%	5%
		Yes	110	49%	5%	32%	4%	11%
		All	390	41%	12%	25%	15%	7%
	25-39	No	160	35%	25%	20%	14%	6%
		Yes	210	66%	5%	16%	4%	10%
		All	370	53%	13%	18%	8%	8%
	40 and over	No	160	35%	29%	17%	15%	5%
		Yes	120	68%	8%	17%	2%	5%
		All	280	50%	20%	17%	9%	5%
	All ages	No	590	36%	21%	21%	16%	5%
		Yes	440	62%	6%	20%	3%	8%
		All	1,030	47%	15%	20%	11%	7%

Figure 3 shows the industry of employment of the ECE cohort one to five years post-study. Twenty-eight percent of the ECE cohort did not work in the ECE sector in their first year after completing. Seven percent were working in other education sectors, 15 percent were working in other non-education sectors, and 6 percent did not earn any taxable income in the New Zealand labour market.

Figure 3: Percentage of students by post-study employment industry and previous ECE work experience, tax years 2005-2009



Five years after completing their qualification, 35 percent of the ECE cohort was not working in the ECE sector. Seven percent were working in other education sectors, 12 percent were working in other non-education sectors, and 16 percent did not earn any taxable income in the New Zealand labour market.

As shown in Figure 3, graduates entering the ECE workforce for the first time were less likely than those with previous ECE work experience to work in ECE. In their fifth year post-study, 42 percent did not work in ECE; of these, 7 percent were working in other education sectors, 15 percent were working in other non-education sectors, and 20 percent did not earn any taxable income in the New Zealand labour market. When compared with those with previous experience in ECE, 26 percent did not work in ECE; of these, 7 percent were working in other education sectors, 8 percent were working in other non-education sectors, and 11 percent did not earn any taxable income in the New Zealand labour market.

Post-study earnings

The figures below relate to annual median earnings in the five year period spanning April 2004 to March 2009.

Earnings include income earned through salaries, wages, and self-employment income, and exclude other types of taxable income, such as dividends, interest, benefits, ACC, student allowance and paid parental leave.

Earnings after study may depend on qualifications attained and level of experience in the field. Non-educational factors, such as age, gender, ethnicity, industry of employment and firm size can account for the difference in earnings. Comparing earnings based on educational characteristics alone can be misleading.

This study does not adjust earnings for any labour market or non-educational characteristics. In particular, it does not adjust for differences in hours worked or part-time status. It does not intend to provide earnings of older graduates or those with previous work experience in the ECE sector. Hence care must be taken when interpreting the extent to which earnings differences between groups can be attributed to education.

With the exception of Table 8, the analysis in this section is restricted to 'young' graduates. For the purposes of this study, 'young' is defined as aged 24 and under. This group includes 380 graduates and makes up 37 percent of the total 2003 ECE cohort. These represent the more traditionally defined students, who moved to tertiary education more or less directly after school and who were more likely to be completing their tertiary education for the first time and entering the labour market proper for the first time.

Table 7: Median post-study earnings of young graduates employed in ECE

Level of qualification	Annual median earnings working in ECE	Annual median earnings of other young 2003 graduates working in				ECE earnings as a proportion of the median earnings of other young 2003 graduates working in			
		Primary Education	Secondary Education	All Education	All industries	Primary Education	Secondary Education	All Education	All industries
One year post-study									
Diploma	\$23,230	S	S	\$25,910	\$17,930	S	S	90%	130%
Bachelors	\$32,230	\$37,100	\$37,260	\$33,510	\$27,420	87%	87%	89%	118%
All	\$27,490	\$37,100	\$37,280	\$32,040	\$24,270	74%	74%	86%	113%
Two years post-study									
Diploma	\$31,490	S	S	\$32,290	\$25,320	S	S	98%	124%
Bachelors	\$35,030	\$39,460	\$39,890	\$39,220	\$36,090	89%	88%	89%	97%
All	\$32,710	\$39,500	\$39,940	\$39,160	\$32,840	83%	82%	84%	100%
Three years post-study									
Diploma	\$35,700	S	S	\$37,860	\$29,890	S	S	94%	119%
Bachelors	\$37,860	\$42,630	\$42,900	\$42,210	\$41,020	89%	88%	90%	92%
All	\$37,020	\$42,660	\$43,040	\$42,110	\$38,000	87%	86%	88%	97%
Four years post-study									
Diploma	\$40,800	S	S	\$40,770	\$34,210	S	S	100%	119%
Bachelors	\$39,390	\$47,110	\$47,780	\$46,160	\$45,950	84%	82%	85%	86%
All	\$40,490	\$47,160	\$47,820	\$45,840	\$42,800	86%	85%	88%	95%
Five years post-study									
Diploma	\$44,620	S	S	\$44,330	\$36,060	S	S	101%	124%
Bachelors	\$45,520	\$51,860	\$53,090	\$50,410	\$48,560	88%	86%	90%	94%
All	\$45,070	\$52,220	\$53,070	\$49,390	\$44,920	86%	85%	91%	100%

(1) Only graduates who earned income in all five tax years 2005 to 2009 are included. A young graduate is defined as aged 24 years or under.

(2) One-year earnings relate to earnings in tax year 2005 (i.e. 1 April 2004 to 31 March 2005). Similarly, two to five-year earnings relate to tax year 2006 (1 April 2005 to 31 March 2006) to tax year 2009 (1 April 2008 to 31 March 2009).

(3) S - cells suppressed due to low cell counts.

Table 7 shows the median annual earnings of young ECE graduates employed in ECE one to five years after they completed their qualification. Earnings are shown in relation to the median earnings of all young 2003 tertiary graduates with similar qualifications. While the earnings for ECE relate specifically to graduates with ECE teaching qualifications, the earnings shown for other education sectors relate to any young graduate from 2003 working in that sector, not just those with teaching qualifications.

For young ECE teaching graduates working in ECE after graduation, the annual median earnings of bachelors graduates were initially around 40 percent higher than those with an ECE teaching diploma. However, the earnings of young ECE diploma graduates increased at a faster rate. After five years, the annual median earnings for a young ECE diploma graduate working in ECE were just 2 percent (or \$900) less than those of a young ECE bachelors graduate working in ECE.

Diploma level qualifications form a much higher percentage of ECE teaching graduates in 2003 than they do for graduates in other education sectors, where bachelors-level qualifications were more prevalent. The smaller numbers of 2003 diploma graduates working in primary and secondary education industries, preclude direct comparisons between young diploma graduates across ECE, primary and secondary education industries. However, it is possible to compare bachelors graduates directly and to compare the combined group of diploma and bachelors graduates across these sectors.

The median annual earnings of young ECE teaching graduates employed in ECE were lower than those of young graduates working in other education sectors. Over the five year period following graduation, the median annual earnings of young ECE graduates working in ECE ranged between 82 and 89 percent of the median earnings of young graduates working in primary and secondary education industries. This difference did not change significantly over the five years of post-study employment covered by this study (April 2004 to March 2009). Five years post-study, the annual median earnings of young ECE graduates (diploma and bachelors combined) were 86 percent and 85 percent of those of young graduates working in primary and secondary schools respectively.

Over all industries (education and non-education), the annual median earnings of young ECE diploma graduates were higher than those of other young diploma graduates, nearly 25 percent after five years. However, the annual median earnings of young ECE teaching bachelors graduates remained on average 5 to 10 percent lower than those of young degree graduates as a whole over the five year period following graduation.

While pay parity policy changes between ECE teachers and those in schools had been introduced progressively over the period covered in this study, the lower earnings of ECE graduates in this study, is likely, in part, to reflect the fact that these changes did not extend to the whole ECE sector. Pay parity between ECE kindergarten teachers and primary school teachers was introduced in 1 July 2002 but was not fully implemented until July 2006 (coinciding with the third year post-study in this report). Kindergarten teachers at this time represented about 20-23 percent of all ECE-qualified teachers.

Budget 2005 allocated higher funding rates to ECE services that functioned like kindergartens to help pay their teachers at the same rates as kindergarten teachers. In July 2005, 185 ECE centres (equivalent to 1000 teachers) covered by the Consenting Parties Collective Agreement received the first of four annual pay parity instalments to be fully implemented by July 2008 (coinciding with the fifth year post-study in this report).

The available data only provides only a proxy for comparing earnings of similarly qualified teachers, as it only permits a comparison by industry of employment. We are not able to

compare teachers with teachers, just those similarly qualified graduates working (in any capacity) in particular industries. The data source also does not permit us to adjust for any differences in hours worked. The extent to which teachers in ECE are more likely than primary and secondary teachers to be in part-time employment is also likely to impact on comparisons of annual earnings.

Given these factors, pay parity between ECE earnings and those in schools is not expected to be shown in the data covered by this study.

Table 8: Annual median earnings of young ECE teaching graduates one, three and five years post-study

Qualification	Worked in ECE (2000-2003)	One year post-study	Three years post-study	Five years post-study	Increase one to three years	Percent increase one to three years	\$ increase one to five years	Percent increase one to five years
Diploma	No	\$17,190	\$34,570	\$43,820	\$17,380	101%	\$26,630	155%
	Yes	\$26,920	\$40,240	\$46,580	\$13,320	49%	\$19,660	73%
	All	\$23,230	\$35,700	\$44,620	\$12,470	54%	\$21,390	92%
Bachelors	No	\$30,750	\$37,440	\$45,840	\$6,690	22%	\$15,090	49%
	Yes	S	S	S	S	S	S	S
	All	\$32,230	\$37,860	\$45,520	\$5,630	17%	\$13,290	41%
All	No	\$26,660	\$35,700	\$44,500	\$9,040	34%	\$17,840	67%
	Yes	\$29,980	\$40,670	\$46,310	\$10,690	36%	\$16,330	54%
	All	\$27,490	\$37,020	\$45,070	\$9,530	35%	\$17,580	64%

(1) Only graduates who earned income in all five tax years 2005 to 2009 are included.

(2) S = cells suppressed due to low cell counts.

Table 8 shows the difference in annual median earnings between those young graduates who worked in ECE while studying, and those that didn't. At diploma level, having some ECE work experience did seem to convey an earnings premium. This premium persisted over the five years covered in this study, albeit reducing with every year of additional post-study employment. At bachelors level, there were too few young graduates with ECE work experience to make an equivalent comparison.

Appendix

ECE teaching qualifications approved by the New Zealand Teachers Council in 2003 and the tertiary education providers accredited to offer these qualifications

Tertiary education provider	ECE qualification code	ECE qualification name
Auckland College of Education	AC1054	Bachelor of Education (Teaching) – ECE
	AC1067	Diploma of Teaching (ECE)
	AC1079	Diploma of Teaching ECE – Pacific Islands
	ACEE03	ECE Teacher Education/ B Ed
Auckland University of Technology	AK3594	Bachelor of Education (ECE Teaching)
Bethlehem Tertiary Institute	PC3033	Bachelor of Education (Teaching) ECE
Christchurch College of Education	CE1024	Bachelor of Teaching and Learning (ECE)
	CEEE03	Diploma in Teaching and Learning (ECE)
	CEES02	Graduate Diploma of Teaching and Learning (ECE)
Dunedin College of Education	DN1016	Bachelor of Education (Teaching) – ECE
	DN1018	Bachelor of Education (Teaching) 0-8 Years
	DNEE03	Diploma of Teaching ECE
	DNES02	Diploma of Teaching ECE
Eastern Institute of Technology	HB3823	Diploma of Teaching (ECE)
Manukau Institute of Technology	MN4307	MIT Diploma of Teaching ECE
New Zealand Tertiary College	PC2604	Diploma of Teaching (ECE)
		Diploma of Teaching ECE – Distance Learning
New Zealand College of Early Childhood Education	PC1356	Diploma of Teaching (ECE) Year 3
Open Polytechnic	OPEE03	Diploma in Teaching (ECE) (L7)
Rangi Ruru Early Childhood College	PCES02	Diploma of Teaching (ECE)
Te Tari Puna Ora O Aotearoa/NZ Childcare	PCEE03	Diploma of Teaching (ECE)
		Diploma of Teaching Pathways Programme (ECE) Year 3
Unitec New Zealand	CA2282	Diploma in Teaching (ECE)
University of Waikato	WIEE03	Bachelor of Teaching: 3 year EC Programme
Victoria University of Wellington	VI00C8	Bachelor of Education (Teaching) EC
Waiariki Institute of Technology	WR2757	Diploma of Teaching (ECE). He Tohu Matau
Waikato Institute of Technology	WK2434	Diploma of Teaching (ECE)
Wellington College of Education	WGEE03	Diploma of Teaching – ECE
Western Institute of Technology Taranaki	TK9802	WITT Diploma of Teaching ECE
Whitireia Community Polytechnic	PR4659	Diploma in Teaching (ECE)

Data definitions

Age

This refers to the age of the graduate at 1 July 2003.

Earnings

Earnings relates to annual pre-taxed income from wages and salary, and any non-zero income from self-employment. Annual income is based on a tax year, so covers income for the year ending 31 March.

Industry of employment

The industry of employment is classified according to the 2006 Australian and New Zealand Standard Industrial Classification (ANZSIC06)⁴ developed by Statistics New Zealand and the Australian Bureau of Statistics. The ANZSIC06 codes P801000 (Preschool education) and Q871000 (Child care services) were used to identify ECE graduates working in the ECE sector.

Tax year

The tax year runs from 1 April to 31 March and so includes two calendar years.

Years post-study

This indicates the number of years since the year of completing their ECE teaching qualification. Tertiary education records are based on calendar years, while the employment and earning years are based on tax years. For example, one-year post-study earnings for a student completing a qualification in 2003 are their earnings in tax year 2005, that is, from 1 April 2004 to 31 March 2005. Similarly, three years post-study refers to tax year 2007, or 1 April 2006 to 31 March 2007.

References

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⁴ See http://www.stats.govt.nz/browse_for_stats/industry_sectors/anzsic06-industry-classification.aspx for more detail.