

## DESIRED OUTCOMES

Everybody has the knowledge and skills needed to participate fully in society. Lifelong learning and education are valued and supported.

# Knowledge and Skills

## INTRODUCTION

Knowledge and skills enhance people's ability to meet their basic needs, widen the range of options open to them in every sphere of life, and enable them to influence the direction their lives take. The skills people possess can also enhance their sense of self-worth, security and belonging.

We live in a society where access to information and proficiency with technology are becoming more important. An inclusive society will increasingly require everybody to have high levels of knowledge and skills.

Knowledge and skills include education and training, as well as abilities gained through daily life. The experiences of very young children within their families affect their acquisition and use of knowledge and skills, and influence their capacity to learn. Adults acquire skills through their work and non-work activities – for example, parenting skills or skills relevant to recreation or leisure activities.

For many people, the acts of learning and mastering new skills are important in themselves. Possession of knowledge and skills can be integral to a person's sense of belonging and self-worth: many people define themselves by what they can "do", not only in employment but elsewhere in life.

Knowledge and skills relate directly to employment decisions and to career choices. Those with relatively few educational qualifications are more likely to be unemployed and, on average, have lower incomes when in work. This affects people's economic standard of living as well as their security and ability to make choices about their lives. Knowledge and skills are important for gaining access to services and for understanding and exercising civil and political rights.

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## INDICATORS

Four indicators are used in this chapter. Each provides a snapshot of New Zealanders' acquisition of knowledge and skills at a particular stage in their lives, from early childhood to school-leaving age to adulthood. They are: participation in early childhood education, school leavers with higher qualifications, participation in tertiary education and the educational attainment of the adult population. The focus of the indicators is on formal education and training. This reflects the importance of formal education and training and also the availability of data – there is little data that captures the contribution of informal, on-the-job training to acquiring knowledge and skills.

The indicators are relevant to current and future social wellbeing. Participation in early childhood education contributes significantly to a child's later development. Going to a kindergarten, kōhanga reo or some other early childhood service prepares children for further learning, helps equip them to cope socially at school and develops their bodies and minds to better prepare them for adult life. Quality early childhood programmes can help narrow the achievement gap between children from low-income families and children from more advantaged families.<sup>39</sup>

Students who obtain higher qualifications at school tend to have more options for tertiary education and future employment. Those who leave school early have a greater risk of unemployment or low incomes.<sup>40</sup>

Participation in tertiary education opens up career opportunities and improves the skills people need to participate in society. This has become particularly important with the increasing dependence on "knowledge" industries that require well-educated, highly skilled workforces. It also captures aspects of lifelong learning through the participation of adults in tertiary education.

Educational attainment of the adult population provides a broad picture of New Zealanders' possession of knowledge and skills. It is influenced by factors not measured in the other indicators, such as adults gaining new qualifications and new migrants arriving with qualifications.

# Participation in early childhood education

## DEFINITION

The number of enrolments of children aged 3 and 4 years in early childhood centres or home-based education programmes as a proportion of all 3 and 4 year olds.

The measure includes all forms of organised and sustained centre and home-based programmes designed to foster learning and emotional and social development in children. The measure overestimates participation because children enrolled in more than one early childhood centre will be double-counted. Information from an alternative measure which avoids double counting, the proportion of Year 1 students who participated in early childhood education, is also included.

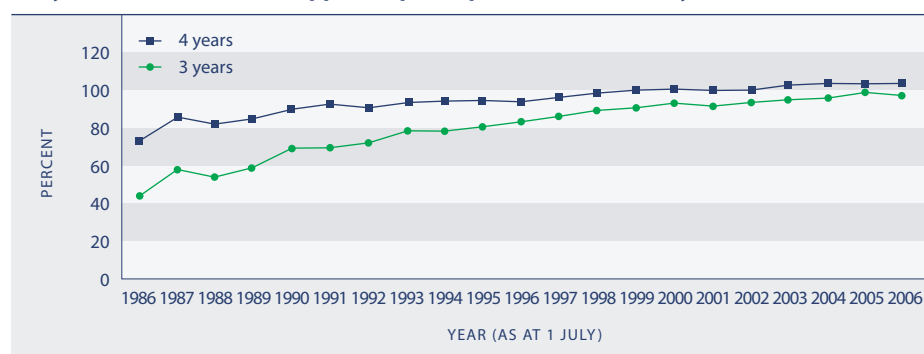
## RELEVANCE

Evidence from New Zealand and international research shows that the early childhood years are vital to a child's development and future ability to learn.<sup>41</sup> Quality early childhood programmes prepare young children socially, physically and academically for entry into primary education and can help narrow the achievement gap between children from low-income families and those from more advantaged families.

## CURRENT LEVEL AND TRENDS

As at 1 July 2006, the "apparent" early childhood education participation rate was 97 percent for 3 year olds and 103 percent for 4 year olds, confirming that some children attend more than one service. These figures represent a substantial increase from 43 percent and 73 percent respectively in 1986. Much of the growth in participation in early childhood education occurred in the five years between 1986 and 1991, with slower growth in subsequent years.

Figure K1.1 **Early childhood education apparent participation rate, 3 and 4 year olds, 1986–2006**



Sources: Ministry of Education; Ministry of Social Development

Note: These figures overestimate the true participation rate. Rates in excess of 100 percent are possible because children can be enrolled in more than one service

## SEX DIFFERENCES

Participation in early childhood education does not appear to vary by sex: boys make up just over half (51 percent) of all enrolments, the same proportion as in the population at that age.

## PARTICIPATION BY TYPE OF SERVICE

In 2006, childcare centres (42 percent) and kindergartens (39 percent) had the largest number of enrolments of 3 and 4 year olds in early childhood education. Much smaller numbers of children were enrolled in playcentres (6 percent) and kōhanga reo (4 percent).

## PRIOR PARTICIPATION BY YEAR 1 STUDENTS

The percentage of new school entrants who have participated in early childhood education services has increased over the last seven years, from 91 percent in July 2000 to 95 percent in July 2006.

## ETHNIC DIFFERENCES

New Zealand European children are the most likely to have attended an early childhood education service before entering primary school: 98 percent compared with 90 percent of Māori and 84 percent of Pacific Year 1 students in 2006. From 2000–2004, the prior participation rate for both Māori and Pacific new entrants increased faster than the rate for New Zealand European new entrants, narrowing the difference between these groups. However, between 2004 and 2006, the prior participation rate for Māori new entrants levelled off, and there was a slight decline in the rate for Pacific new entrants.

Table K1.1

### Early childhood education attendance (%) by Year 1 students, by ethnic group, as at 1 July 2000–2006

	European	Māori	Pacific	Asian	Other	Total
2000	95.4	84.8	76.1	89.2	83.0	91.0
2001	96.0	85.3	76.3	89.8	84.1	91.3
2002	96.6	86.5	79.4	92.1	86.6	92.3
2003	97.4	88.4	83.4	92.4	88.9	93.6
2004	97.6	89.3	84.7	94.1	89.4	94.1
2005	97.7	89.9	84.5	95.1	89.9	94.3
2006	98.0	89.9	84.2	96.0	91.7	94.5

Source: Ministry of Education

Note: These figures exclude cases for which attendance was unknown

## SOCIO-ECONOMIC DIFFERENCES

Year 1 children in low decile schools (those that draw their students from communities with the highest degree of socio-economic disadvantage) are much less likely to have attended an early childhood education service than children in high decile schools. In 2006, only 83 percent of new entrants in decile 1 schools had previously attended early childhood education services, compared with 97 percent in decile 6 schools and 99 percent in decile 10 schools.

## REGIONAL DIFFERENCES

In 2006, prior participation in early childhood education by Year 1 students was highest in the Canterbury and Otago regions (both 98 percent), and lowest in Northland (89 percent), Auckland and Gisborne (both 92 percent).

# School leavers with higher qualifications

## DEFINITION

The proportion of secondary school leavers who left school with a qualification at National Certificate of Educational Achievement (NCEA) Level 2 or above.

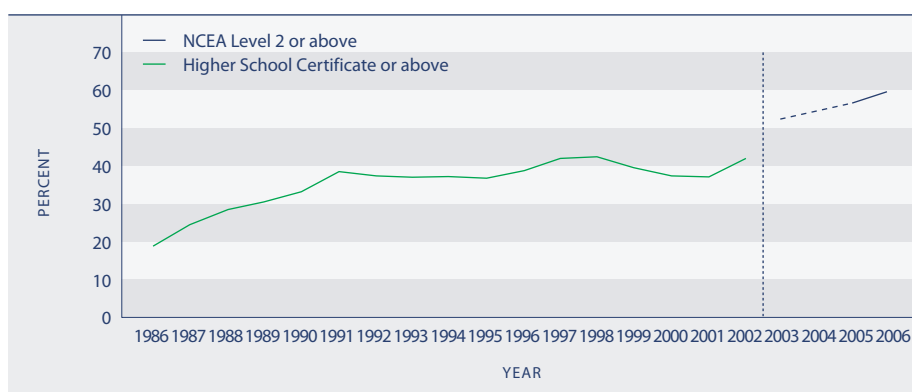
## RELEVANCE

Upper secondary school qualifications serve as the foundation for higher (post-secondary) learning and training opportunities as well as the preparation for direct entry into the labour market. Those who leave school early with few qualifications are at a much greater risk of unemployment or vulnerability in the labour force and of having low incomes.<sup>42</sup>

## CURRENT LEVEL AND TRENDS

In 2006, 60 percent of school leavers (34,000 students) left school with a qualification at NCEA Level 2 or above, an increase from the 2005 figure of 57 percent (33,000 students).<sup>43</sup> Because of changes in the qualification structure, it is not possible to compare exactly the attainment of upper secondary school students who left school before 2003 with those who left school later. To illustrate trends in higher school attainment over the long term, Figure K2.1 includes Higher School Certificate and above for the years 1986 to 2002.

Figure K2.1 **Proportion of school leavers with Higher School Certificate or above, 1986–2002, and NCEA Level 2 or above, 2003, 2005–2006**



Source: Ministry of Education

Notes: (1) A direct comparison cannot be made between rates up to and including 2002 with rates for 2003 on, due to the change in the qualification structure (see Appendix 2 for details) (2) Because of methodological changes, 2004 is not comparable with other years and has been omitted

## SEX DIFFERENCES

Female students are more likely than male students to leave school with an upper secondary school qualification. Between 2005 and 2006, the proportion of school leavers with NCEA Level 2 or above increased for both sexes but there was a slightly larger increase for males than for females. As a result, the sex difference in school attainment narrowed slightly between 2005 and 2006, from 10 percentage points to 9 percentage points.

Table K2.1 **Proportion (%) of school leavers with NCEA Level 2 or above, by sex, 2003, 2005–2006**

	Males	Females
2003	47.6	57.9
2005	52.0	62.3
2006	55.8	64.5

Source: Ministry of Education

Note: Because of methodological changes, 2004 is not comparable with other years and has been omitted

## ETHNIC DIFFERENCES

The proportion of school leavers with upper secondary school qualifications varies widely by ethnic group. Asian students who left school in 2006 had the highest proportion with NCEA Level 2 or above, followed by European school leavers, then Pacific and Māori school leavers. Between 2005 and 2006, there was an increase for all ethnic groups in the proportion of students leaving with a qualification at NCEA Level 2 or above. The increase was greater for Māori and Pacific students than for European and Asian students.

Table K2.2 **Proportion (%) of school leavers with NCEA Level 2 or above, by ethnic group, 2003, 2005–2006**

	European	Māori	Pacific peoples	Asian	Other	Total
2003	57.4	28.8	42.3	75.1	54.2	52.6
2005	63.0	32.7	45.3	79.9	55.8	57.1
2006	65.4	36.7	49.6	82.2	63.5	60.2

Source: Ministry of Education

Note: Because of methodological changes, 2004 is not comparable with other years and has been omitted

## SOCIO-ECONOMIC DIFFERENCES

Young people from schools that draw their students from low socio-economic communities are less likely than other young people to attain higher school qualifications. In 2006, only 43 percent of school leavers from deciles 1–3 schools (in the most disadvantaged communities) attained qualifications at NCEA Level 2 or above, compared with 57 percent of those leaving deciles 4–7 schools and 74 percent of those leaving deciles 8–10 schools.

## REGIONAL DIFFERENCES

The Nelson region had the highest proportion (70 percent) of 2006 school leavers with qualifications at NCEA Level 2 or above, followed by Otago (67 percent), Auckland (66 percent), Wellington and Canterbury (each 63 percent). The West Coast had the lowest proportion (35 percent), followed by Gisborne (48 percent) and Tasman (51 percent).

# Participation in tertiary education

## DEFINITION

The proportion of the population aged 15 years and over enrolled at any time during the year in formal tertiary education leading to a recognised New Zealand qualification.

Tertiary education providers include public institutions (universities, polytechnics, colleges of education, wānanga), and private tertiary education providers receiving government funding or approval, or registered with the New Zealand Qualifications Authority. Qualifications range from certificates and diplomas to bachelor and post-graduate degrees. Domestic students only are included.

## RELEVANCE

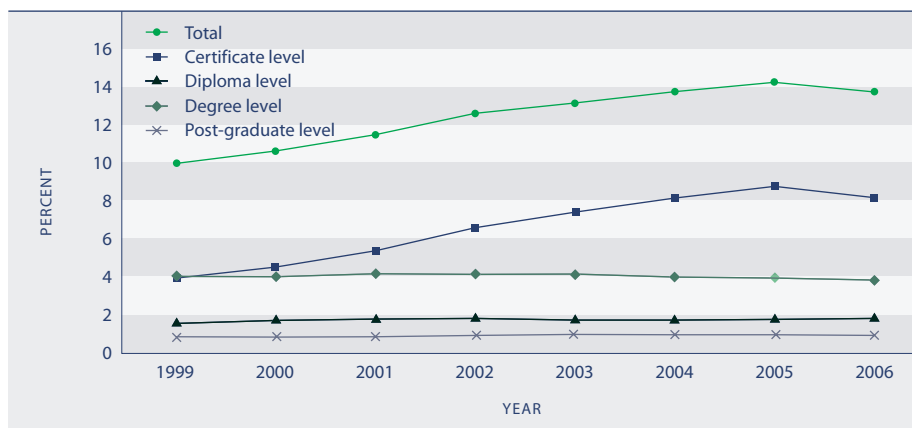
The acquisition of a tertiary qualification provides individuals with additional skills and knowledge to participate in society and in the economy.

## CURRENT LEVEL AND TRENDS

During 2006, 13.7 percent of people aged 15 years and over (448,000 people) were enrolled in formal tertiary education, a slight decline from 14.2 percent (457,000 people) in 2005. This slight decline could be attributable in part to the strong labour market encouraging people into employment rather than further education.

Most of the decline in tertiary education participation between 2005 and 2006 was due to a fall in the number of people taking Levels 1–3 certificate courses. The rate of participation in certificate level courses as a whole (ie Levels 1–4) grew strongly between 1999 and 2005 (from 4.0 percent to 8.8 percent), then fell to 8.1 percent in 2006. In total, 10 percent of people aged 15 years and over were enrolled in sub-degree tertiary education courses in 2006, up from 6 percent in 1999. In comparison, the proportion enrolled in degree and post-graduate courses remained fairly steady at around 5 percent over the period 1999–2006.

Figure K3.1 Tertiary education participation rate, by qualification level, 1999–2006



Source: Ministry of Education

## AGE AND SEX DIFFERENCES

Tertiary education participation is highest among 18–24 year olds (36.5 percent in 2006), followed by 25–39 year olds (16.6 percent). The participation rate for 18–24 year olds changed little between 1999 and 2006. In contrast, the rate for people aged 40 years and over and people aged 25–39 years increased substantially over that period.

Since the mid-1990s, women have been more likely than men to participate in tertiary study at ages 18 years and over. However, as females accounted for all of the decline in enrolments between 2005 and 2006, the sex gap has narrowed slightly. In 2006, there was no sex difference in the proportion enrolled in

sub-degree courses (10 percent of males and females), but females were more likely than males to be enrolled in degree and post-graduate courses (6 percent and 4 percent, respectively).

Table K3.1 **Tertiary participation rates (%), by age and sex, selected years, 1999–2006**

	15–17	18–24	25–39	40+	Total
<b>Males</b>					
1999	9.2	32.3	10.0	2.7	9.1
2001	11.0	34.0	12.0	3.5	10.2
2005	14.6	33.2	15.1	6.7	12.9
2006	10.8	33.5	14.8	7.1	12.8
<b>Females</b>					
1999	8.3	35.7	12.8	4.4	10.8
2001	11.2	38.9	15.8	5.5	12.7
2005	12.3	39.6	19.6	8.5	15.4
2006	9.4	39.6	18.3	8.1	14.6

Source: Ministry of Education

## ETHNIC DIFFERENCES

In 2006, the age-standardised tertiary education participation rate was highest for Māori at 18 percent, followed by the Asian ethnic group (15 percent), Europeans (13 percent) and Pacific peoples (12 percent). The increase in the age-standardised rate between 1999 and 2006 was higher than average for the Asian and Māori ethnic groups. The slight fall in the age-standardised rate between 2005 and 2006 occurred across all ethnic groups but was larger than average for Māori, Pacific peoples and Asian ethnic groups.

At the core tertiary education age group 18–24 years, the European ethnic group had the highest participation rate in 2006 (37 percent), while the rate for the Asian ethnic group (32 percent) was slightly above that of Māori and Pacific peoples (each 31 percent). Between 2002 and 2006, the participation rate of 18–24 year olds remained steady for the European ethnic group, declined for Māori, and increased for the Pacific peoples and Asian ethnic groups.

At older ages, Māori had the highest tertiary participation rates in 2006, followed by the Asian, Pacific peoples and European ethnic groups.

Table K3.2 **Tertiary participation rates (%), by age and ethnic group, 2006**

Age group	European	Māori	Pacific peoples	Asian
15–17	9.2	12.7	8.1	5.3
18–24	37.2	30.9	31.1	32.4
25–39	14.4	22.6	15.2	17.0
40+	6.1	15.6	7.5	12.2
<b>Total</b>	<b>11.6</b>	<b>20.3</b>	<b>14.6</b>	<b>17.6</b>

Source: Ministry of Education

Māori and Pacific students are less likely to be enrolled in degree-level courses than students from the European or Asian ethnic groups. Almost 90 percent of the decline in Māori enrolments between 2005 and 2006 was due to fewer Māori taking Levels 1–3 certificate courses.

## INTERNATIONAL COMPARISON

There are no robust measures of tertiary participation across OECD countries. Some indication of New Zealand's relative standing can be gained from the proportion of people enrolled in education at various ages. In 2004, 30 percent of 20–29 year olds (the age group more likely to be enrolled in tertiary than secondary education) were enrolled in education, placing New Zealand seventh out of 28 countries. This was above the OECD median of 25 percent. The New Zealand rate was higher than those of the United Kingdom (28 percent) and the United States (23 percent) but below the rate for Australia (33 percent).<sup>44</sup>



# Educational attainment of the adult population

## DEFINITION

The proportion of adults aged 25–64 years with an educational attainment of at least upper secondary school level, defined in the International Standard Classification of Education (ISCED 1997) as Level 3 and above, and including tertiary qualifications at bachelor’s degree and above (Level 5A/6).

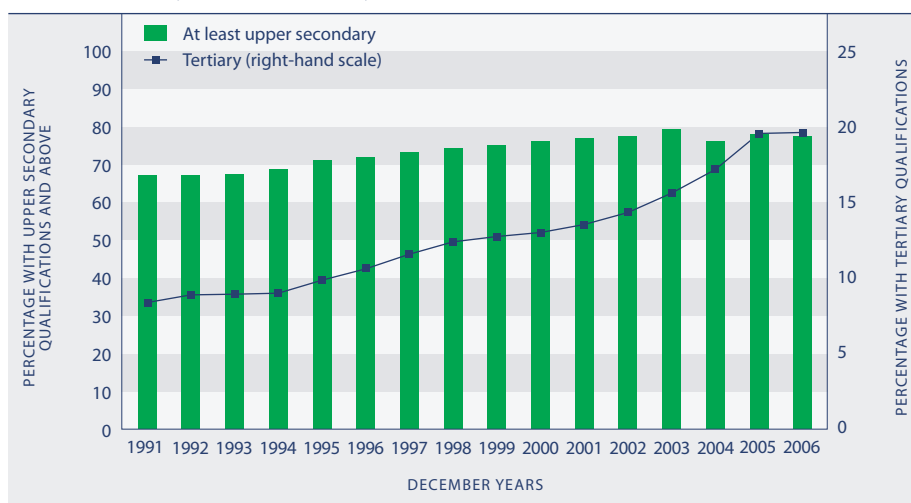
## RELEVANCE

The educational attainment of the adult population is an indicator of the skills available in the economy. The level of formal educational qualifications in the population is a commonly used proxy for the stock of “human capital”, ie the skills available in the population and labour force.

## CURRENT LEVEL AND TRENDS

In the year ended December 2006, 77 percent of the population aged 25–64 years (1.65 million people) had attained an educational qualification at upper secondary level or above, slightly lower than in 2005 (78 percent) but a substantial increase from 67 percent in 1991. Over the same period the proportion of adults with a bachelor’s degree or higher qualification had risen from 8 percent to almost 20 percent (418,000 people). The slight decline in educational qualifications at upper secondary level or above could be attributable in part to the strong labour market encouraging people into employment rather than into further education.

Figure K4.1 **Proportion of adults aged 25–64 years with an educational attainment of at least upper secondary level and tertiary level, 1991–2006**



Source: Statistics New Zealand, Household Labour Force Survey

Notes: (1) Tertiary equals bachelor’s degree or higher (2) This measure has been revised – see Appendix 2 for details

## AGE AND SEX DIFFERENCES

Younger adults aged 25–34 years are much more likely to have at least upper secondary school qualifications or a bachelor’s degree or higher than adults aged 55–64 years.

Sex differences in educational attainment have narrowed over time. For younger age groups, women are more likely than men to have higher qualifications.

Table K4.1 **Proportion (%) of population aged 25–64 years with higher qualifications, by age and sex, 2006**

	25–34	35–44	45–54	55–64	Total 25–64
<b>At least upper secondary</b>					
Males	82.5	80.8	78.2	68.5	78.1
Females	85.0	80.8	75.4	60.0	76.4
<b>Total</b>	<b>83.8</b>	<b>80.8</b>	<b>76.8</b>	<b>64.2</b>	<b>77.2</b>
<b>Tertiary</b>					
Males	22.5	20.8	18.5	15.2	19.5
Females	29.1	21.4	16.5	8.9	19.6
<b>Total</b>	<b>25.9</b>	<b>21.1</b>	<b>17.4</b>	<b>12.0</b>	<b>19.5</b>

Source: Statistics New Zealand, Household Labour Force Survey, December years

Notes: (1) Tertiary equals bachelor's degree or higher (2) This measure has been revised – see Appendix 2 for details

## ETHNIC DIFFERENCES

Māori and Pacific adults are much less likely than adults in the European and Other ethnic groups to have higher qualifications. In the year ended December 2006, 61 percent of Māori and 54 percent of Pacific adults aged 25–64 years held at least upper secondary qualifications, compared with 80 percent of Europeans. Similarly, just 9 percent of Māori and 7 percent of Pacific adults held a tertiary qualification at bachelor's degree level or above, compared with 19 percent of Europeans. The proportion of adults with at least upper secondary qualifications grew faster for Māori and Pacific adults than for Europeans up to 2003, but fell in the three years to 2006. The Other ethnic group (which includes Asians) has consistently had the highest proportion of adults with a tertiary qualification, more than double that of the European ethnic group.

Table K4.2 **Proportion (%) of population aged 25–64 years with higher qualifications, by ethnic group, selected years, 1996–2006**

	European	Māori	Pacific	Other	Total
<b>At least upper secondary</b>					
1996	75.3	48.4	45.1	79.4	71.8
2001	78.8	59.9	65.8	85.1	76.8
2005	80.6	62.4	55.3	81.6	77.8
2006	80.1	60.7	53.5	83.5	77.2
<b>Tertiary</b>					
1996	10.8	2.5	1.9	27.4	10.6
2001	13.2	5.0	5.6	32.0	13.4
2005	18.6	8.1	7.0	42.1	19.5
2006	18.9	8.5	7.1	39.0	19.5

Source: Statistics New Zealand, Household Labour Force Survey, December years

Notes: (1) In this data, Other includes Asian ethnic groups (2) Tertiary equals bachelor's degree or higher (3) This measure has been revised – see Appendix 2 for details

## INTERNATIONAL COMPARISON

In 2004, 78 percent of New Zealand adults had at least upper secondary level qualifications, compared with an OECD average of 67 percent.<sup>45</sup> New Zealand ranked 12th equal (with Finland) out of 30 OECD countries. New Zealand also ranked 12th equal (with Switzerland and Ireland) in the proportion of adults who have bachelor's degrees or higher, with a rate of 18 percent (just below the OECD average of 19 percent). Countries which had higher proportions of adults with qualifications at this level included the United States (30 percent – the highest rate), Canada and Australia (each 22 percent), and the United Kingdom (20 percent). New Zealand is among the two-thirds of OECD countries in which females aged 25–34 years are more likely than males of that age to have tertiary qualifications to bachelor's degree or higher.