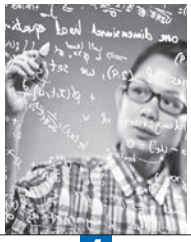
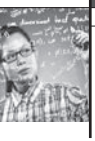


4

Expectations and Reality for School-Leavers

This chapter explores the differences between 15-year-old boys' and girls' expectations for further education and their careers, and their preparedness to search for a job – and reveals whether adolescent expectations become reality after teenagers become adults. The chapter also describes young men's and women's levels of proficiency in literacy and numeracy after they leave compulsory schooling and examines gender differences in how adults use their skills at work. Financial literacy among 15-year-olds is also discussed.



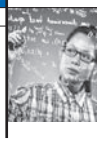
PISA data offer compelling evidence of the differences in how boys and girls approach learning, how they feel about their own abilities to learn, and how they perform in reading, mathematics, science and problem solving. Information gathered through an Educational Career questionnaire that is distributed along with the PISA assessment also reveals that boys and girls hold different expectations for their futures and that they tend to prepare themselves for life after compulsory education in very different ways.

Those differences might have something to do with what and how students study at school. In comprehensive school systems, all 15-year-old students follow the same programme, while in differentiated school systems, students are streamed into different programmes. Some of these programmes may be primarily academic, others offer primarily vocational components, and yet others may offer combinations of academic and vocational programmes (Kerckhoff, 2000; LeTendre et al., 2003). Figure 4.1 indicates that, in many countries and economies, boys are more likely than girls to be enrolled in technical and vocational programmes when such programmes are available in a given school system (Table 4.1).

What the data tell us

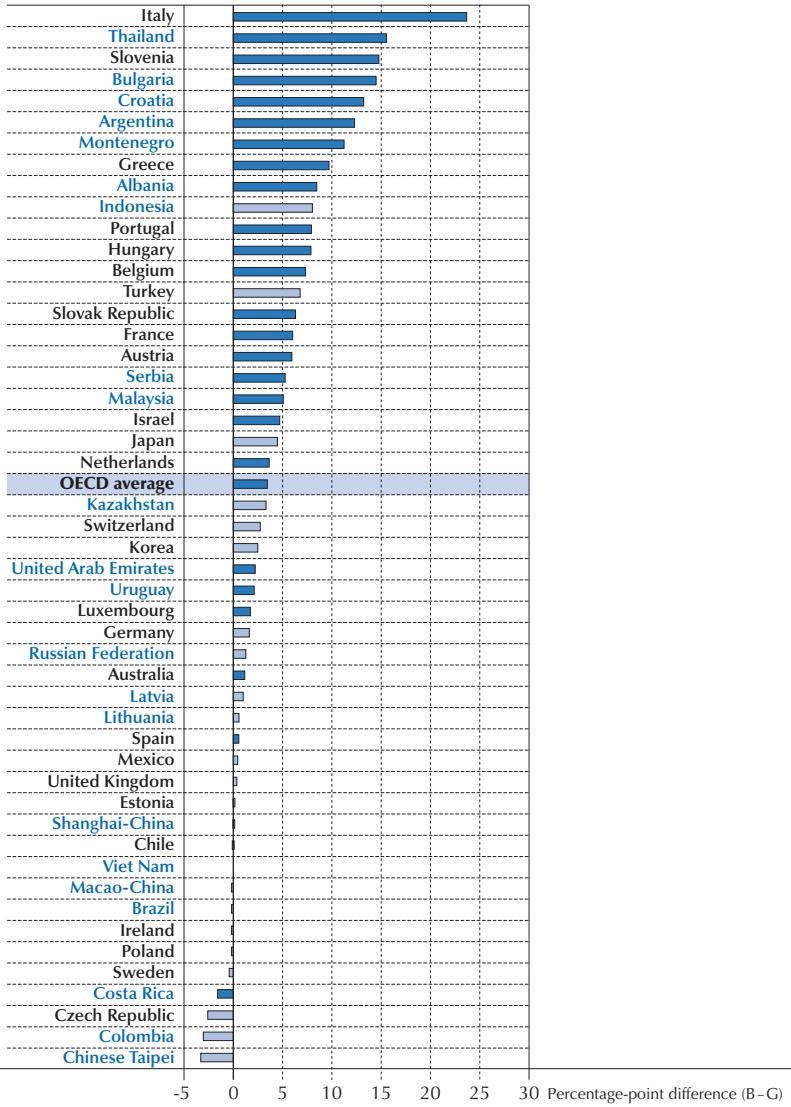
- On average across countries and economies that distributed the Educational Careers questionnaire in 2012, 43% of girls and 37% of boys reported that they had not mastered the skills needed to perform well at a job interview. In Croatia, Italy, Serbia, the Slovak Republic and Slovenia, the share of girls who reported that they had not learned how to prepare for a job interview is over 10 percentage points larger than the share of boys who so reported; in Australia, Denmark and Hong Kong-China, there are no gender differences in this regard.
- Less than 5% of girls in OECD countries, on average, contemplate pursuing a career in engineering or computing (and the definition of computing and engineering includes such gender-neutral fields as architecture), while 16% of girls expect a career in health (excluding nurses and midwives) but only 7% of boys do.
- In 2000, 36% of 15-year-old boys and 43% of girls that age expected to work as managers or professionals when they were 30; but in 2012, only 22% of 25-34 year-old men and 23% of 25-34 year-old women worked in such occupations.
- While PISA reveals large gender differences in reading, in favour of 15-year-old girls, the Survey of Adult Skills suggests that there are no significant gender differences in literacy proficiency among 16-29 year-olds.
- Among workers in their 30s, 40s and particularly workers in their 50s and 60s, men appear to be considerably more likely than women to read and write at work, as well as to use numeracy, ICT and problem-solving skills.

Students who participated in PISA 2012 were asked to report on the kind of programme in which they were enrolled. As shown in Table 4.1, on average across OECD countries, 82% of 15-year-old students were enrolled in a programme with a general curriculum, 14% were enrolled in a programme with a pre-vocational or vocational curriculum, and 4% were in modular programmes that combine any or all of these curricula. In Denmark, Finland, Hong Kong-China, Iceland, Jordan, Liechtenstein, New Zealand, Norway, Peru, Qatar, Romania, Singapore, Tunisia and the United States, all 15-year-old students were enrolled in a general programme.

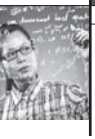


■ Figure 4.1 ■

Gender differences in participation in pre-vocational and vocational programmes



Notes: Differences that are statistically significant are marked in a darker tone.
The figure only shows countries and economies where students have the option of enrolling in pre-vocational or vocational programmes.
Data for the Slovak Republic do not consider gender differences in participation in modular programmes.
Countries and economies are ranked in descending order of the percentage-point difference between boys and girls who are enrolled in pre-vocational or vocational programmes rather than general programmes.
Source: OECD, PISA 2012 Database, Table 4.1.



In Austria, Croatia, Montenegro, Serbia and Slovenia, more than one in two students were enrolled in a vocational or pre-vocational programme. In Canada, all 15-year-olds, and in the Slovak Republic one out of four students, were enrolled in a modular programme.

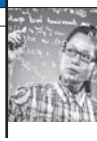
Admission and placement policies establish frameworks for selecting students for academic programmes and for streaming students according to their career goals, education needs and academic performance. On average across OECD countries, 16% of boys and 13% of girls attend pre-vocational and vocational schools. However, in many of the countries where large proportions of students are enrolled in pre-vocational and vocational programmes, boys are heavily over-represented in these programmes (Figure 4.1). For example, in Italy 50% of students are enrolled in pre-vocational and vocational programmes. However, while 61% of boys attend such programmes, only 37% of girls do (Table 4.1). In part, this disparity might reflect the fact that boys are more likely to be low achievers than girls, and low achievers are over-represented among technical and vocational school students. But boys' over-representation in these tracks might also reflect a greater awareness among boys for the need to be prepared for the labour market, the need to acquire more practical skills, or simply the fact that boys might enjoy the content and ways of learning in vocational programmes more than girls.

PREPARING FOR A JOB

In a subset of countries and economies that participated in PISA 2012, boys and girls were asked what they did to find out more about future studies or work. According to their own reports, boys are generally more likely than girls to become interns in a workplace, "shadow" workers in their jobs or visit job fairs, while girls are more likely than boys to have completed a questionnaire to find out about their interests and abilities, and to have browsed the Internet for information about careers (Figure 4.2 and Table 4.2).

On average across the 15 OECD countries where students were asked about what they did to find out more about possible future studies or careers, 30% of boys but only 25% of girls reported that they had participated in an internship programme, and 40% of boys but only 34% of girls reported that they had "shadowed" a worker at his or her job. By contrast, 66% of girls but 59% of boys reported that they had completed a questionnaire to determine their interests and abilities, 76% of girls but 67% of boys browsed the Internet for information about careers, and 59% of girls but only 49% of boys researched the Internet for information about education programmes in which they could enrol (Table 4.2).

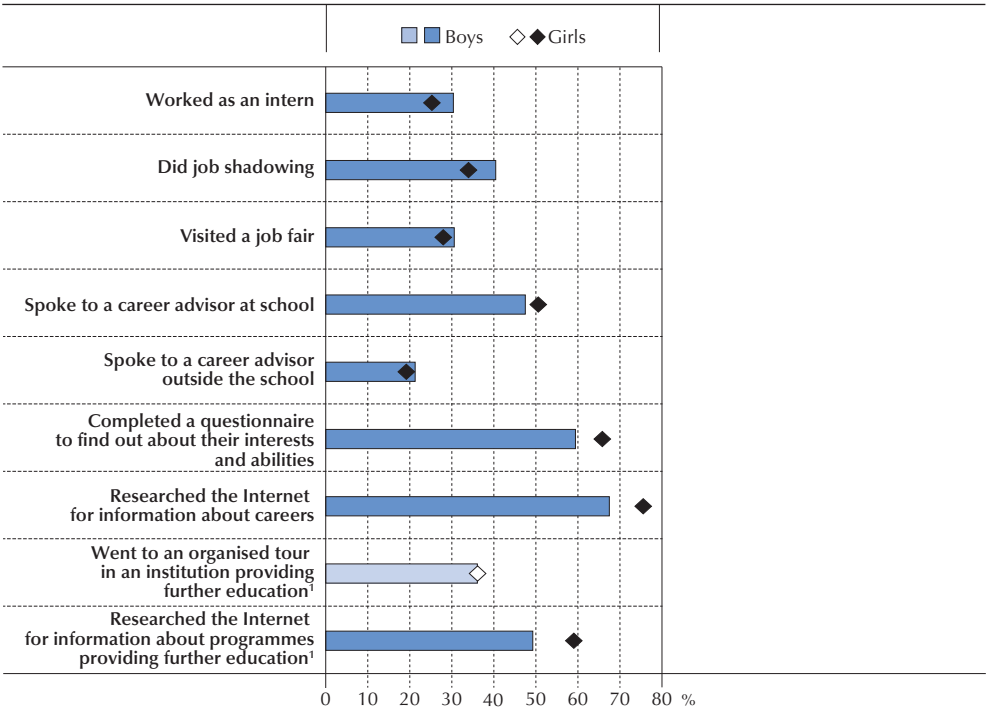
The data shown in Figures 4.2 and 4.3 thus suggest that girls tend to do more of the easy, less hands-on activities that could provide them with information about different career options. By contrast, boys appear to be not only more likely to be enrolled in education pathways that are more "practical" and work-related, but also, when considering a possible occupation, they are more apt to try to work in a related job. Being interns and shadowing workers in their jobs not only help boys to gain a better understanding of the labour market, but these practical activities are the first steps towards building the networks and connections that could be useful when the job search becomes serious. It is as if boys ask themselves, "Could I do this?" while girls ask themselves, "Would I be appropriate for such a position? Would others see me as suitable for this job or to pursue this occupation?"



■ Figure 4.2 ■

What boys and girls do to find out more about future studies or careers

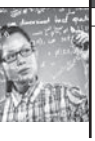
OECD countries



1. Institutions providing further education are ISCED 3-5 in the PISA 2012 questionnaire.
Note: Gender differences that are statistically significant are marked in a darker tone.
Source: OECD, PISA 2012 Database, Table 4.2.

The Educational Career questionnaire was also used to find out which skills students had acquired in or outside of school that could help them enter the labour market or make decisions about continuing their education. For example, the questionnaire asked students to report whether, at or outside of school, they had acquired skills related to: finding information about jobs they are interested in; searching for a job; writing a resumé, CV or a summary of their qualifications; preparing for a job interview; finding information about upper secondary and higher education programmes in which they are interested; and finding information about financing higher education (e.g. student loans or grants).

Based on the students' reports, PISA finds that, on average, boys are more likely than girls to have acquired a set of skills that could help them to navigate the job-search process, to apply for a particular job, and to succeed in job interviews. But a sizeable proportion of both boys and girls appears to be unprepared to take the next steps towards either further education or the labour market. Across the OECD countries that distributed the questionnaire, almost one in four girls and one in five boys reported that they did not know how to search for a job. Girls and boys feel even



less prepared for job interviews: 43% of girls and 37% of boys reported that they had not mastered the skills needed to perform well at a job interview (Table 4.3b). Almost one in three boys and girls reported that they had not acquired the skills that are necessary to write a CV or a summary of their qualifications, while 14% of boys and 15% of girls reported that they did not know how to find information about the jobs that interest them (Table 4.3a). While boys were more likely than girls to report that they do not know how to find information about education and training programmes that they could pursue upon finishing their current studies,[1] 26% of boys and 23% of girls, on average, reported that they had never acquired such skills. Boys were also less likely than girls to report that they do not know how to find information about financing higher education: 52% of girls and 46% of boys reported that they had not acquired those skills (Table 4.3b).

■ Figure 4.3 ■

Gender differences in students' preparation for future studies and careers

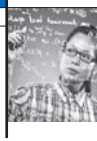
Girls are more likely to have done the following activites to find out about future study or types of work

No gender disparities

Boys are more likely to have done the following activities to find out about future study or types of work

		Worked as an intern	Did job shadowing	Visited a job fair	Spoke to a career advisor at school	Spoke to a career advisor outside the school	Completed a questionnaire to find out about their interests and abilities	Researched the Internet for information about careers	Went to an organised tour in an institution providing further education[1]	Researched the Internet for information about programmes providing further education[1]
OECD	Australia									
	Austria									
	Belgium									
	Canada									
	Denmark									
	Finland									
	Hungary									
	Ireland									
	Italy									
	Korea									
	Luxembourg									
	New Zealand									
	Portugal									
	Slovak Republic									
	Slovenia									
	OECD average									
Partners	Croatia	N/A								
	Hong Kong-China									
	Latvia									
	Macao-China									
	Serbia									
	Shanghai-China									
	Singapore									

1. Institutions providing further education are ISCED 3-5 in the PISA 2012 questionnaire.
Source: OECD, PISA 2012 Database, Table 4.2.

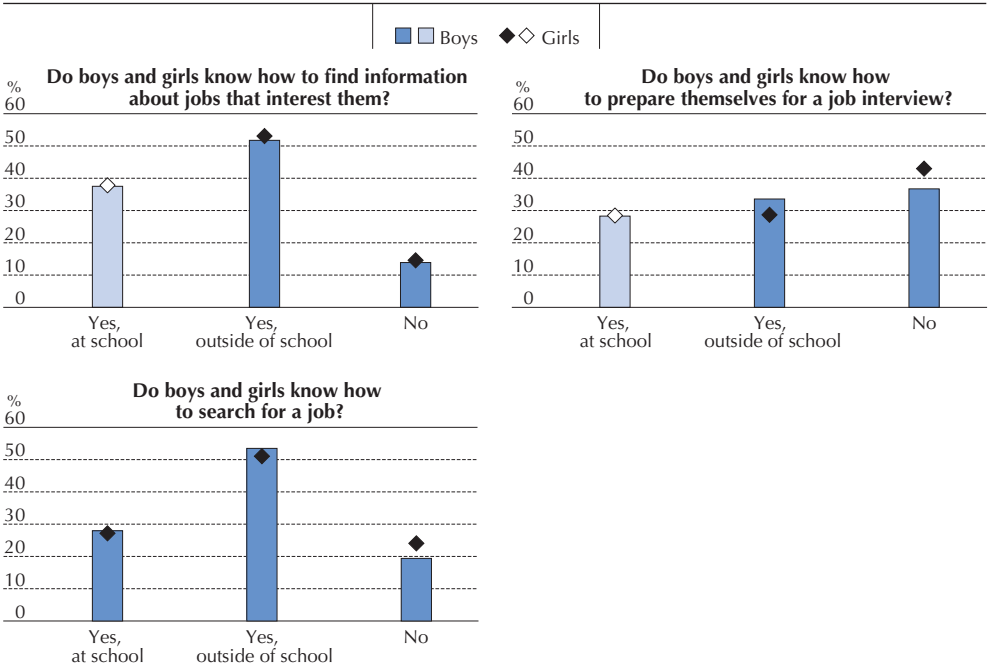


In some countries, the gender differences in the acquisition of skills that could help students make a smooth transition into further study or work are striking. For example, in Croatia, Italy, Serbia, the Slovak Republic and Slovenia, the share of girls who reported that they had not learned how to prepare for a job interview is over 10 percentage points larger than the share of boys who so reported. By contrast, in Australia, Denmark and Hong Kong-China, there are no gender differences in this respect (Table 4.3b). In Austria, Hungary and Luxembourg, the proportion of girls who reported that they do not know how to find information on student financing (i.e. student loans or grants) is also over 10 percentage points larger than the share of boys who so reported, while in Finland and Macao-China, no gender gap is observed in this respect.

■ Figure 4.4 ■

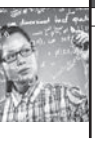
Gender differences in whether, and where, students reported that they had acquired different skills

OECD countries



Note: Gender differences that are statistically significant are marked in a darker tone.
Source: OECD, PISA 2012 Database, Tables 4.3a and 4.3b.

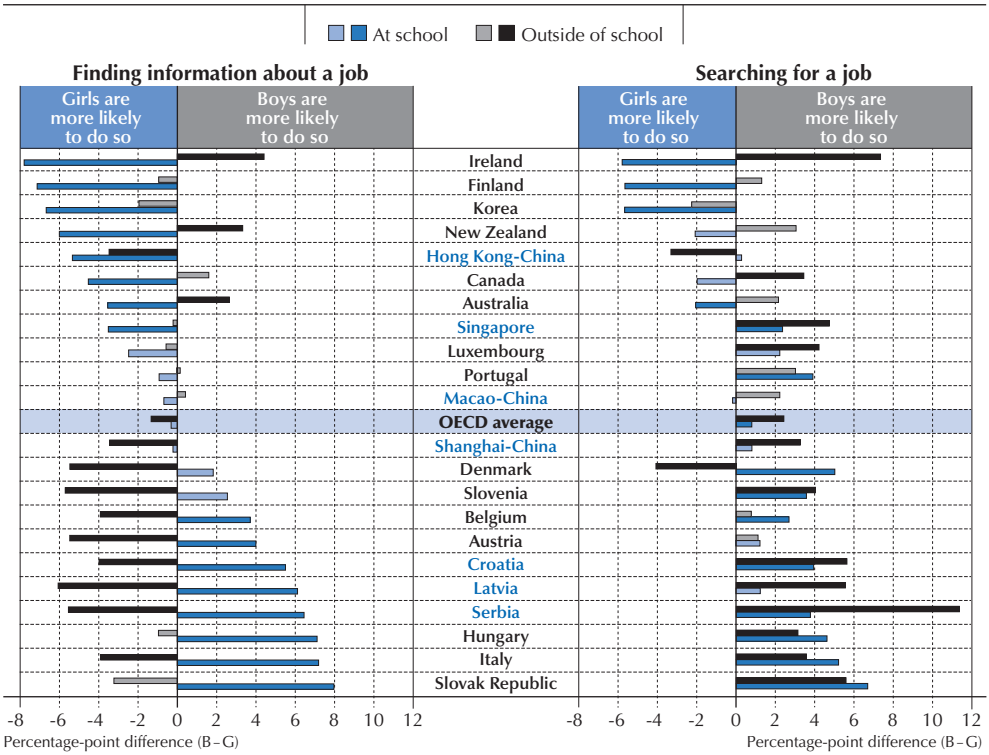
In the large majority of countries, students, particularly boys, reported that any skills that could help them make a smooth transition from compulsory schooling to a job or higher education were acquired outside of school. More than one in two students reported that they had learned how to find information about jobs that interest them outside of school, while only 38% of students reported that they had acquired such skills at school. Students in Australia, Canada and Finland appear to receive a lot of this kind of practical training in compulsory education.



In these three countries, more than one in two 15-year-old boys and girls reported that they had learned, at school, how to find information about jobs that interest them (Table 4.3b). Some 53% of boys and 51% of girls reported that they had learned – outside of school – how to look for a job, while only 28% of boys and 27% of girls reported that they had acquired those skills at school. Differences in the proportions of boys and girls who reported that they had learned, outside of school, how to look for a job are particularly large in Croatia, Ireland, Latvia, Serbia and the Slovak Republic (Table 4.3a).

■ Figure 4.5 ■

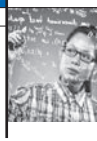
Where students acquire the skills to find information about a job or searching for a job



Note: Gender differences that are statistically significant are marked in a darker tone.
Countries and economies are ranked in ascending order of the percentage-point difference between boys and girls who reported they learned how to find information about a job at school.
Source: OECD, PISA 2012 Database, Table 4.3a.

FORMING EXPECTATIONS ABOUT FURTHER EDUCATION AND WORK

PISA 2000, 2003 and 2006 asked students what occupation they expected to be working in by the time they were 30 years old. Responses to this open-ended question were re-classified according to the International Standard Classification of Occupations 88 (ISCO88; International



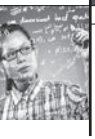
Labour Office, 1988). PISA 2000, 2003 and 2009 asked students about their expectations for continuing education. In 2009, this question was part of the Educational Career questionnaire; only 21 PISA-participating countries and economies distributed that questionnaire.

Students' expectations about their future education and work not only reflect their academic successes and skills; they also create the conditions conducive to academic excellence and the acquisition of skills. For example, students who expect to complete a university degree or to work in demanding jobs are more likely to choose more demanding courses and to invest greater effort in school than students who expect to complete their studies after less schooling, and with lower qualifications, or to land jobs that do not require high-level skills. Students who hold high expectations for their education and careers are more likely than those who do not to complement their school work with additional courses or related activities during their free time. Students' expectations are partly self-fulfilling prophecies, as the effort students invest to meet their expectations usually pays off. When comparing students of similar socio-economic backgrounds and academic achievement, students who expect to graduate from university are more likely to earn that degree than their peers who do not hold such high expectations (Campbell, 1983; Morgan, 2005; Perna, 2000; Sewell, et al., 2003).

In some PISA-participating countries, many students did not answer the question on career and education expectations (Table 4.4). This could indicate that students are uncertain about their future. It could also, however, reflect students' lack of interest in answering the question about their career expectations, particularly because it is an open-ended question that requires students to formulate an answer. To determine why, in fact, students did not answer this question, the percentage of unanswered career-expectations questions (missing values) was compared to the percentage of unanswered questions concerning the occupation of the students' mother and father. The result of this comparison suggests that many students did not answer the career expectations because of their indecision (i.e. there are many more missing values for this question than for the question concerning their parents' occupations), and that boys tend to be more undecided than girls, as there are more missing values in the questionnaires completed by boys than in those completed by girls.

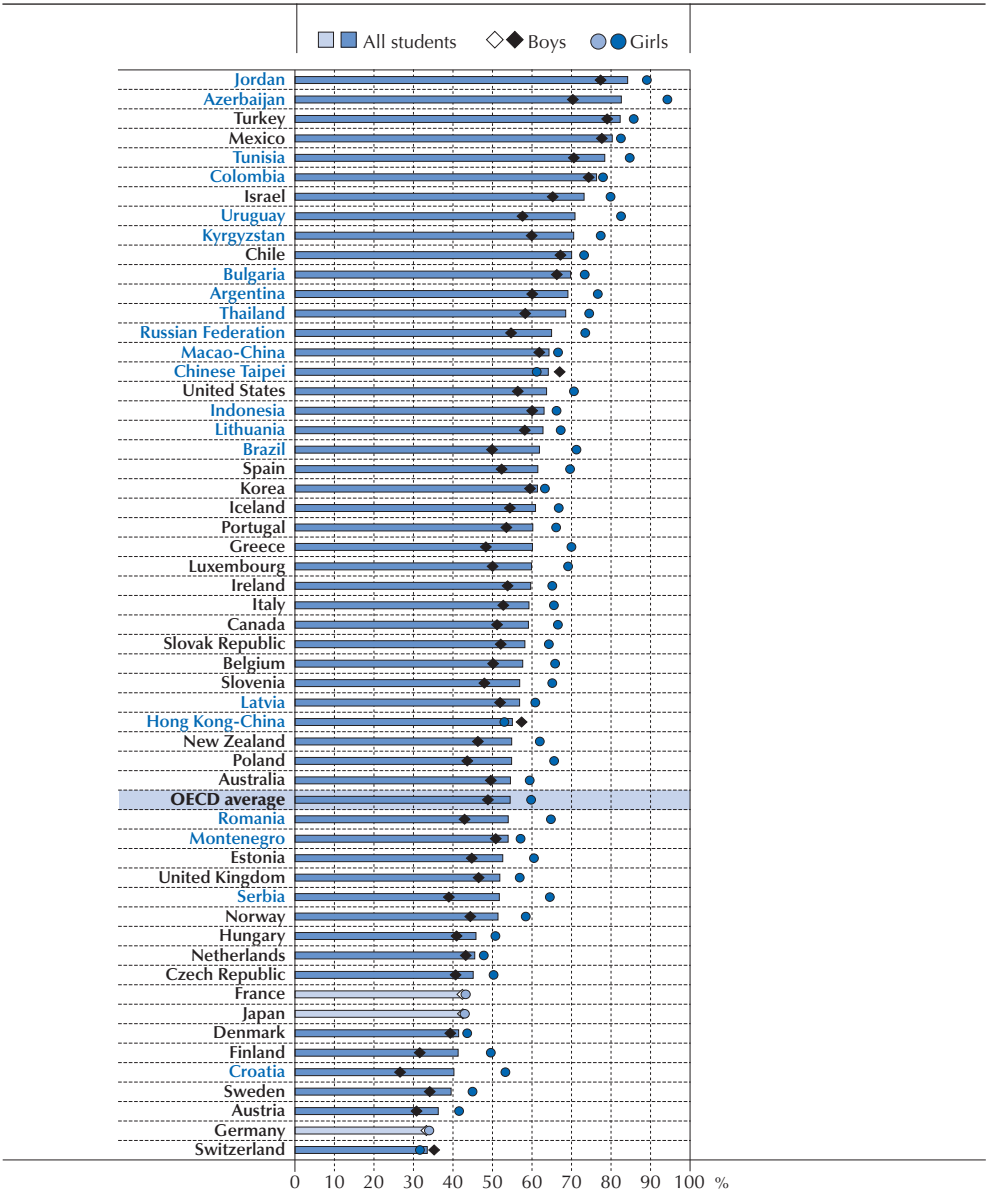
Differences in ambition

Studies based on PISA and other youth surveys over the past 30 years consistently find that upper secondary students tend to set ambitious goals for their education and occupation (Marks, 2010; McDaniel, 2010; Sikora and Saha, 2007; Sikora and Saha, 2009; Croll, 2008; Goyette, 2008; Little, 1978; Reynolds et al., 2006). PISA 2006 and PISA 2009 data suggest that across OECD and partner countries and economies, a substantial share of students holds ambitious education and career goals, particularly the latter. Figure 4.6 shows that, in most countries, the majority of students expects to work as professionals, managers, senior officials or legislators (which correspond to groups 1 and 2 in the ISCO88 coding; International Labour Office, 1988). Professional and managerial occupations generally require university-level education, superior proficiency in numeracy and literacy, and excellent personal communication skills. Figure 4.8 shows that a large proportion of girls expects to complete a university degree.

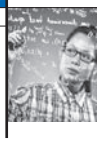


■ Figure 4.6 ■

Percentage of students who plan to work as managers or professionals, by gender



Note: Gender differences that are statistically significant are marked in a darker tone.
Countries and economies are ranked in descending order of the percentage of students who expect to work in ISCO88 major occupational groups 1 and 2 at the age of 30.
Source: OECD, PISA 2006 Database, Table 4.5a.



In 2006, around 55% of students across OECD countries expected to work as legislators, senior officials, managers or professionals. In Greece, Iceland, Korea, Portugal, Spain and the United States, 60% of students held similar expectations, while in Chile, Israel, Mexico and Turkey, 70% of students or more did. At the other end of the scale, in Sweden and in the highly stratified education systems of Austria, Germany and Switzerland, only 40% of 15-year-olds or less expected to work in high-status careers (Figure 4.6 and Table 4.5a). Countries such as Austria, Germany and Switzerland have well-organised and highly successful vocational education and training (VET) systems with a clear emphasis on labour market prospects and the opportunities available. Moreover, in these countries associate professionals may be highly skilled and rewarded because of the training opportunities they receive within the VET sector (see also OECD, 2012). Therefore students in these education systems may be particularly likely to hold realistic expectations and to aspire to work in occupations that are less socially valued and rewarded in other countries.

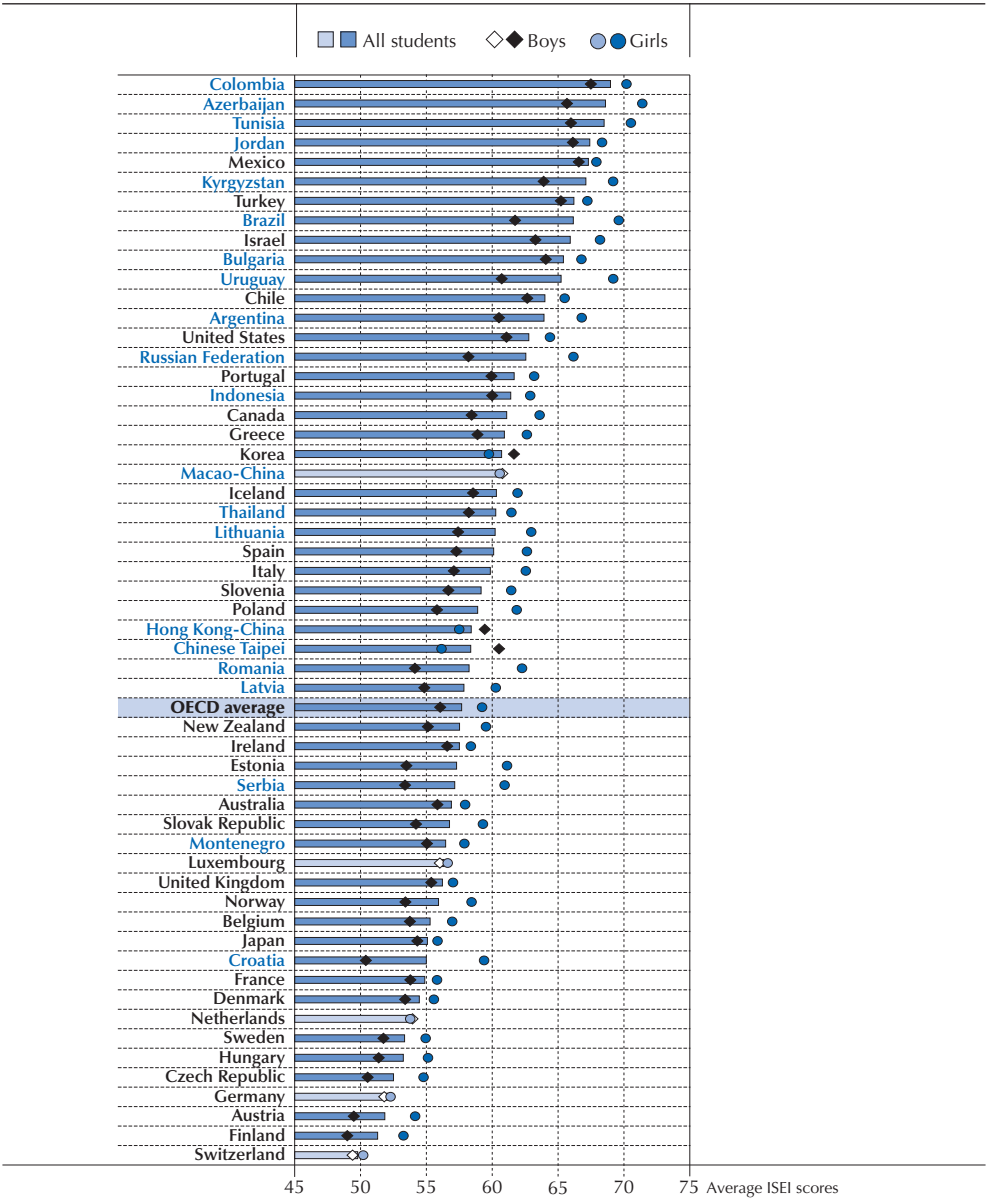
PISA 2006 also reveals that students in partner countries and economies are generally more ambitious than those in OECD countries. On average, 65% of students in the partner countries and economies that participated in PISA 2006 reported that they intend to work as legislators, senior officials, managers or professionals, and over 70% of students in Azerbaijan, Colombia, Jordan, Kyrgyzstan and Uruguay reported that they expect to be working in these occupations. The exception to this general pattern was Croatia, where only 40% of students expected to become professionals or managers (Figure 4.6 and Table 4.5a).

Differences in ambition among students across countries can be attributed to several factors, including family background, academic performance, labour-market conditions and the features of national education systems (Sikora and Saha, 2009). For example, Figure 4.7 shows that in countries where students are sorted into separate tracks before they are 15 years old, students hold particularly low expectations for their future occupations. This may be because those who are already in education tracks that do not lead to professional and managerial jobs tend to adjust their expectations accordingly and align their expectations to fit what is expected of them (Buchmann and Park, 2009). In contrast, students in more open, comprehensive systems can nurture hopes to be employed in jobs that require high skills, even if they have no real chance of attaining their goals. Students who hold high expectations may be more motivated and ready to put time and effort into their studies because they can see purpose and meaning in their pursuit of excellence.

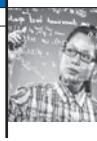
Results presented in Figure 4.6 indicate that, across almost all countries and economies that participated in PISA 2006, girls held more ambitious career expectations than boys. On average across OECD countries, girls were 11 percentage points more likely than boys to expect to work as legislators, senior officials, managers and professionals. France, Germany and Japan were the only OECD countries where similar proportions of boys and girls aspired to these occupations, while in Switzerland and the partner economies Hong Kong-China and Chinese Taipei, boys generally held slightly more ambitious expectations than girls. The gender gap in career expectations was particularly wide in Greece, Poland and the partner countries Azerbaijan, Brazil, Croatia, Romania, Serbia and Uruguay. In all of these countries, the proportion of girls who expected to work as legislators, senior officials, managers or professionals was 20 percentage points larger than the proportion of boys who expected to work in those occupations (ISCO88 groups 1 and 2).

■ Figure 4.7 ■

Average status of the occupations boys and girls expect to work in at the age of 30



Notes: Gender differences that are statistically significant are marked in a darker tone.
ISEI stands for the *International Socio-Economic Index* (higher values indicate higher status).
Countries and economies are ranked in descending order of the average ISEI score for all students.
Source: OECD, PISA 2006 Database, Table 4.5a.

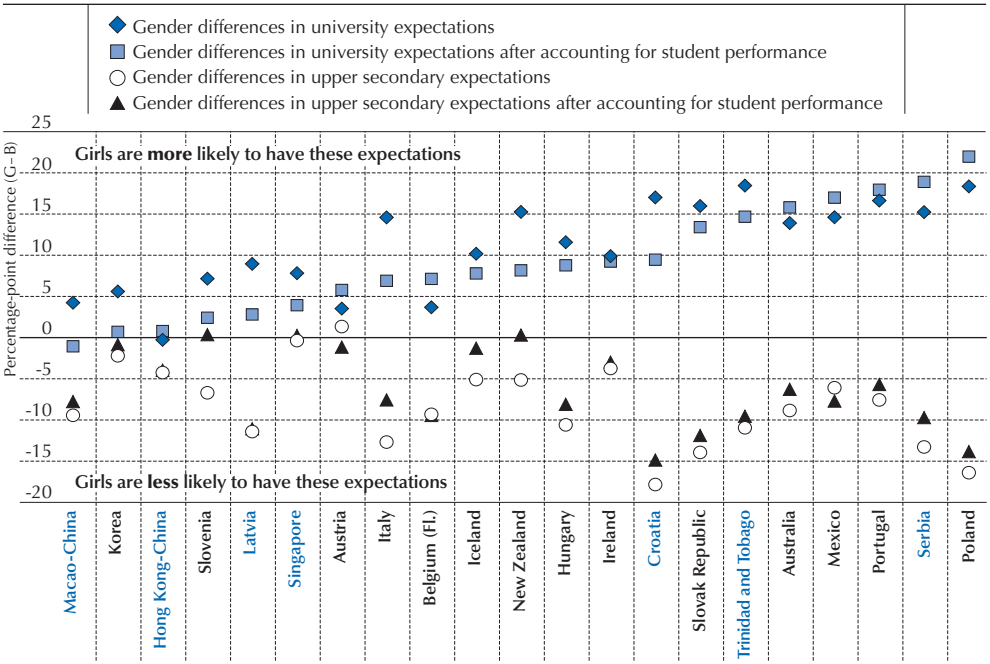


The data shown in Figure 4.7 confirm that a larger proportion of girls than boys generally aspires to higher-status occupations. This is determined using an indicator of the status of the expected occupation (as defined by the ISEI scale)[2] rather than by major occupational groups (as indicated by the ISCO88 classification). Information on expected occupational status was derived by using students' reported career expectations and then matching individual answers to the ISEI scale (Ganzeboom and Treiman, 1996).

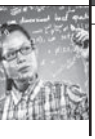
The ISEI scale of occupational status ranges from 10 to 90, with low values on the scale denoting low-status occupations and high values denoting high-status occupations. The advantage of the ISEI scale over broad occupational groups is that, since it can convey information about differences in the education required for, and typical financial returns to, a particular occupation, it is more precise. For instance, judges in courts of law receive the top score of 90, medical doctors stand at 88, while university professors are given the score of 77. This contrasts with dancers and choreographers, who rank at 64 and social-work professionals at 51. In 2006, girls in OECD countries expected to work in occupations with an average value of 59 points on the ISEI scale of expected occupational status while boys expected to work in occupations with an average value of 56 points on the scale (Table 4.5a).

■ Figure 4.8 ■

Gender differences in expectations of completing university and upper secondary degrees



Countries and economies are ranked in ascending order of the gender difference (girls–boys) in the percentage of students who expect to earn a university degree, after accounting for students' reading and mathematics performance.
Source: OECD, PISA 2009 Database, Tables 4.6a and 4.6b.



While relatively few – one in four – 15-year-old students in Latvia said that they expect to complete a university degree, in most other countries and economies that distributed the Educational Career questionnaire in 2009, large proportions of students reported that they expect to earn a university degree. University degrees include liberal arts and professional degrees, but not degrees from technical or vocational tertiary institutions. The proportion of students who expected to complete a university-level education was largest in Korea (81%) and exceeded 60% in Australia, Singapore and Trinidad and Tobago. This proportion was smallest in Latvia (25%) and smaller than 40% in Austria, the Flemish Community of Belgium, Macao-China and Slovenia (Table 4.6a).

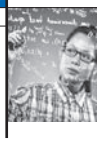
Differences in choice of preferred occupations

Figure 4.9 presents a selection from the list of occupations that boys and girls expect to work in as young adults. While it contains no information on where a particular occupation ranks in the choice of 15-year-olds, it presents a mosaic of careers that were particularly popular among PISA 2006 respondents. It shows the 22 occupations that were among the 10 most popular occupations for boys and for girls, and shows the number of OECD countries and the number of partner countries and economies in which each of these occupations were among the top 10 occupations cited by boys and by girls.

The data represented in Figure 4.9 suggest that boys and girls generally expect careers in different fields, and that gender differences in career expectations vary greatly across countries. "Medical doctor" is the only occupation mentioned by boys and girls alike in more than 25 OECD countries. The career of lawyer was chosen by girls in 25 OECD countries and 17 partner countries and economies, but chosen by boys in only 10 OECD countries and 10 partner countries and economies. Similarly "architects, town and traffic planners" were among the most popular occupations chosen by boys in as many as 13 OECD countries and in 2 partner countries and economies, and by girls in 10 OECD countries and 2 partner countries and economies.

A large number of girls in many PISA-participating countries expect to have a career as hairdresser or beautician, while such occupations are not ranked among the 10 most popular occupations among boys in any OECD or partner country or economy. Other professions favoured by girls include nursing, midwifery, teaching, veterinary medicine, childcare and psychology – often referred to as "nurturance-oriented" careers. In contrast, the data shown in Figure 4.9 suggest that boys prefer professional sport, car mechanics, computing, engineering and law enforcement as careers. Cooking also appears on the list of the ten most popular occupations among boys. In Hong Kong-China, Indonesia, Japan and Korea, government-related careers are particularly popular among both genders. In these Asian countries, public service is an occupational choice that trumps even the universally coveted law and medicine in popularity (Sikora and Pokropek, 2011).

These data suggest that, with few exceptions, not only do boys and girls have very different career expectations, but students in different countries tend to see their future careers in very different occupations. Teenagers generally tend to choose careers from a relatively well-defined spectrum. A concentration of interest in relatively few careers may indicate little knowledge of the options available in the labour market and could create a potential skills mismatch between what the labour market needs and the availability of suitable workers.



■ Figure 4.9 ■

Selected occupations from the lists of the ten most popular career choices among students in a particular country

Boys				Girls			
ISCO88 code		Number of OECD countries	Number of partner countries	ISCO88 code		Number of OECD countries	Number of partner countries
3475	Athletes, sports persons	27	13	**2221**	**Medical doctors**	32	21
2221	**Medical doctors**	26	15	5141	Hairdressers, barbers, beauticians, etc.	28	10
7231	Motor vehicle mechanics and fitters	25	6	**2421**	**Lawyers**	25	17
2140	Architects, engineers	14	11	2445	Psychologists	25	10
5162	Police officers	14	9	**2451**	**Authors, journalists and other writers**	20	8
2141	**Architects, town and traffic planners**	13	2	**3471**	**Decorators and commercial designers**	16	8
5122	Cooks	12	7	2230	Nursing and midwifery professionals	13	6
7137	Building trades, electricians	10	1	**2300**	**Teaching professionals**	12	10
7124	Carpenters and joiners	10	0	2331	Primary education teaching professionals	12	4
2132	Computer programmers	10	10	2223	Veterinarians	12	5
2421	**Lawyers**	10	10	**2141**	**Architects, town and traffic planners**	10	2
2130	Computing professionals	8	1	3231	Nursing associate professionals	9	2
2131	Computer systems designers and analysts	7	5	**2320**	**Secondary education teaching professionals**	7	3
2411	**Accountants**	6	5	2332	Pre-primary education teaching professionals	9	1
2149	Architects engineers	6	11	3226	Physiotherapists, associate professionals	7	0
3121	Computer assistants	6	1	5220	Shop salespersons and demonstrators	6	2
1310	Small enterprise general managers	6	11	**2411**	**Accountants**	5	9
2300	**Teaching professionals**	6	5	3320	Pre-primary education teaching associate professionals	5	0
7136	Plumbers and pipe fitters	5	1	4100	Office clerks	4	3
2451	**Authors, journalists and other writers**	4	0	5131	Childcare workers	4	0
3471	**Decorators and commercial designers**	4	1	2211	Biologists, botanists, zoologists, etc.	3	3
2320	**Secondary education teaching professionals**	4	2	2321	Secondary teachers, academic track, incl. middle school	4	6

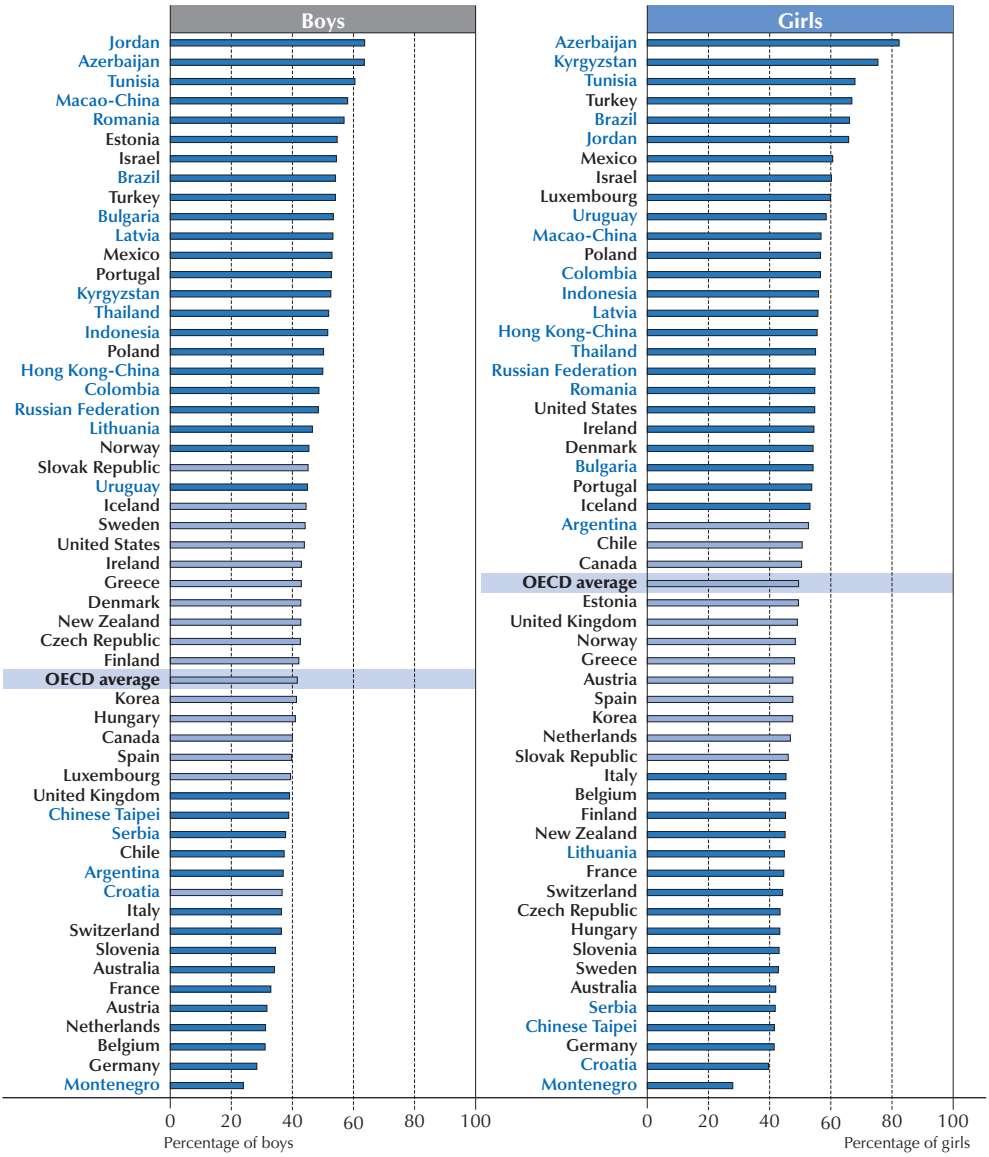
Notes: ISCO88 refers to the International Standard Classification of Occupations. The most popular occupations among both boys and girls are indicated in bold.
Source: OECD, PISA 2006 Database.

Figure 4.10 shows the proportion of students who cited, as their expected career, one of the ten most popular occupations among their peers of the same gender. When this proportion is large, students' career expectations can be considered to be highly concentrated; when this proportion is small, students' career expectations can be considered to be not very concentrated. Overall, concentration tends to be lower in OECD countries than among partner countries and economies, where students' plans appear to focus more on the secure and well-rewarded managerial and professional careers, even though for many students the chances of realising such ambitious goals are slim, at best.

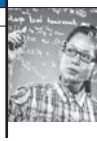
Figure 4.10 also indicates that there are systematic differences in the concentration of career plans between boys and girls. In most countries, a larger proportion of girls is attracted to the ten most popular career choices among peers of the same gender (the OECD average is about 50%).

■ Figure 4.10 ■

Where boys and girls are more likely to expect to work in one of the ten most popular careers in their country



Note: Differences that are statistically significant compared to the OECD average are marked in a darker tone.
Countries and economies are ranked in descending order of the percentage of boys (left panel) and girls (right panel) who expect to work in one of the ten most popular occupations among boys (and girls).
Source: OECD, PISA 2006 Database, Table 4.5b.



In contrast, boys' career plans tend to be less concentrated (the OECD average is 42%). It is possible to attribute these differences to the fact that, historically, women have been concentrated in the non-manual sector of employment in which only high-level professional occupations are attractive employment options. In contrast, boys in many PISA-participating countries can look forward to attractive employment opportunities in both manual and non-manual sectors, where men work as managers and professionals as well as tradesmen and craftsmen who are often well-rewarded and enjoy considerable work autonomy.

Expectations of careers in computing and engineering

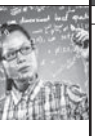
Figure 4.11 shows the proportion of boys and girls who plan to enter engineering and computing careers while Figure 4.12 shows the proportion of boys and girls who plan to enter health science-related careers.[3] Careers in engineering and computing attract relatively few girls. On average among OECD countries, less than 5% of girls contemplate pursuing these careers. This is remarkable, especially because the definition of computing and engineering used in this report includes such fields as architecture, which is hardly considered to be a quintessentially "masculine" job. There is much variation across countries in the numbers of students opting for future employment in this field, ranging from relatively large proportions in Chile, Colombia, Jordan, Mexico, Poland, Slovenia and Thailand, to very small proportions in Azerbaijan, Finland, Kyrgyzstan, Macao-China, Montenegro and the Netherlands.

Yet, the most striking feature of these data is that in almost no country does the number of girls thinking of computing and engineering as their future career exceed the number of boys contemplating such a career. The only exceptions to this rule are Bulgaria, Indonesia and Montenegro. And the ratios of boys to girls who expect to enter a career in computing and engineering are relatively large in most OECD countries and in many partner countries and economies. On average, there are almost four times as many boys as girls who expect to be employed in engineering and computing in OECD countries, and close to three times as many boys as girls in partner countries and economies (Figure 4.11 and Table 4.5c).

Expectations of careers in health services

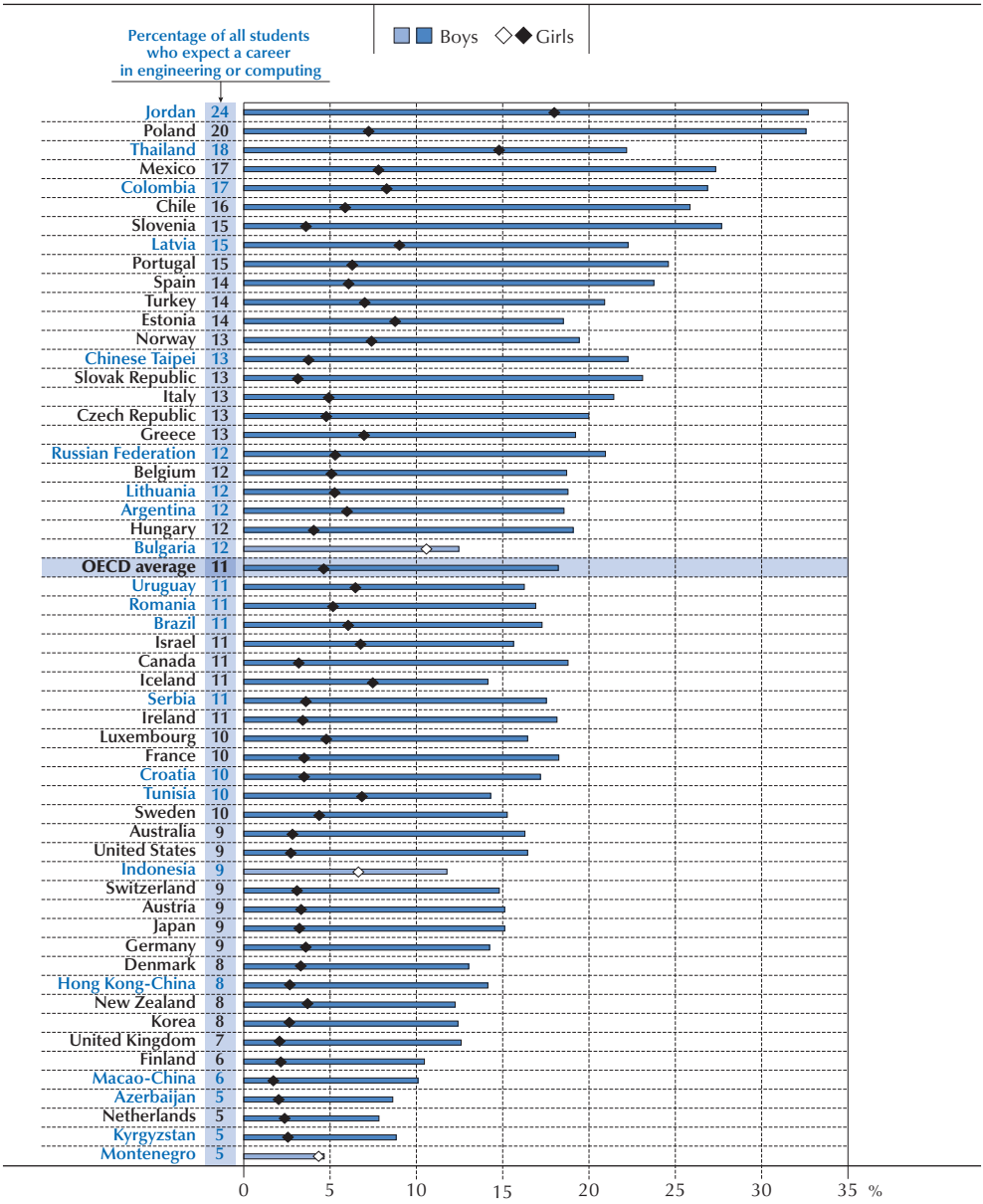
The pattern of preferences for health-science careers by gender is a mirror image of the expectations related to employment in engineering and computing. Just as boys outnumbered girls in their enthusiasm for careers in computing and engineering, girls who yearn for a career in health and medicine outnumber boys in every country. This pattern holds even after nurses and midwives are excluded from the list of health-related careers, demonstrating that the gender imbalance in preference for health-related careers is not solely the result of the traditional over-representation of women in nursing and midwifery.

On average across OECD countries, the proportion of girls who expect to work in health services – excluding nurses and midwives – is 9 percentage points larger than that of boys (16% of girls expect a career in health while only 7% of boys do). Girls in Portugal and the United States and the partner countries Brazil and Kyrgyzstan are particularly more likely to expect to pursue a career in health than boys. In contrast, girls and boys in the partner countries and economies Bulgaria, Hong Kong-China, Jordan and Chinese Taipei hold similar expectations of a career in health services (Figure 4.12 and Table 4.5d).

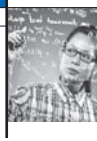


■ Figure 4.11 ■

Proportion of boys and girls expecting a career in engineering or computing

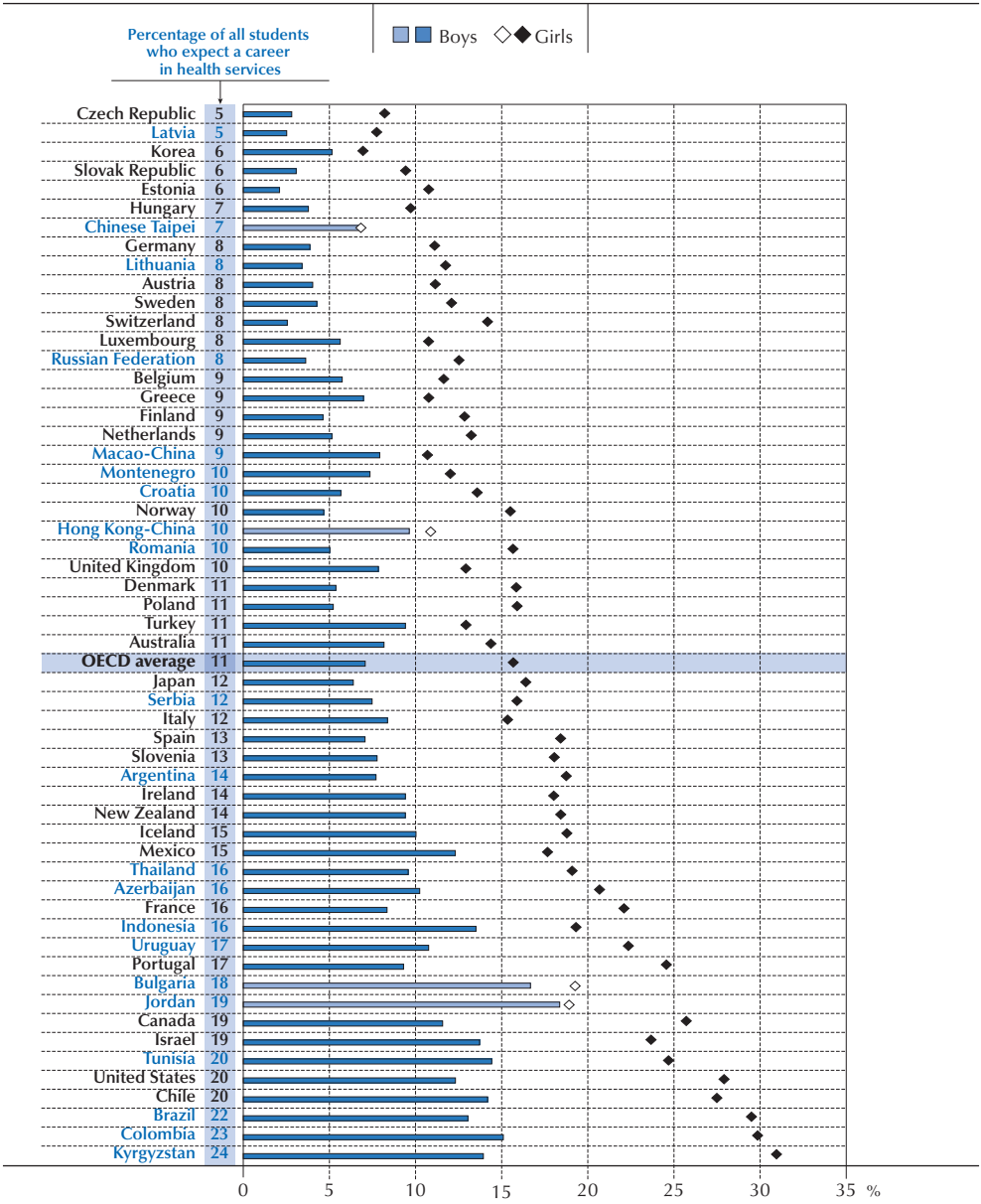


Note: Differences between the percentages of boys and girls that are statistically significant are marked in a darker tone.
Countries and economies are ranked in descending order of the percentage of all students who plan a career in engineering or computing, including architecture.
Source: OECD, PISA 2006 Database, Table 4.5c.

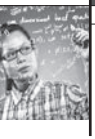


■ Figure 4.12 ■

Proportion of boys and girls expecting a career in health services



Note: Differences between the percentages of boys and girls that are statistically significant are marked in a darker tone.
Countries and economies are ranked in ascending order of the percentage of all students who plan a career in health services, excluding nurses and midwives.
Source: OECD, PISA 2006 Database, Table 4.5d.



Expectations vs. reality

As noted above, holding high expectations for one's future can instil the motivation that, in turn, spurs students to work hard at school with the aim of achieving the goals they set for themselves. But to what extent are adolescent expectations fulfilled by the time those adolescents have become young adults? Data from Tables 4.8a and 4.8b show in which careers boys and girls who participated in PISA 2000 and PISA 2003 expected to work by the time they were 30, and the education qualifications they would hold. The tables also show what the corresponding cohort of young adults actually achieved, according to the 2012 Survey of Adult Skills. Results indicate that both boys and girls generally hold unrealistic expectations for their careers. In 2000, 34% of boys and 41% of girls expected to work as managers or professionals when they were 30; but in 2012, only 21% of 25-34 year-old men and 23% of 25-34 year-old women worked in such occupations (Table 4.8a). This suggests that girls tend to hold particularly ambitious, but unrealistic, expectations, and that they may thus be particularly disappointed when they fail to achieve their career goals. On a more positive note, the young men and women who participated in the Survey of Adult Skills in 2012 tended to hold jobs of similar perceived social status, as measured by the ISEI score of occupational prestige. This could be a first step towards more equal career opportunities for men and women in the future.

Box 4.1. Key facts about the Survey of Adult Skills (PIAAC)

What is assessed

The Survey of Adult Skills, a product of the OECD Programme for the International Assessment of Adults Competencies (PIAAC), assesses the proficiency of adults from age 16 onwards in literacy, numeracy and problem solving in technology-rich environments. These skills are "key information-processing competencies" that are relevant to adults in many social contexts and work situations, and necessary for fully integrating and participating in the labour market, education and training, and social and civic life. In addition, the survey collects a range of information on the reading- and numeracy-related activities of respondents, the use of information and communication technologies at work and in everyday life, and on a range of generic skills, such as collaborating with others and organising one's time, required of individuals in their work. Respondents are also asked whether their skills and qualifications match their work requirements and whether they have autonomy over key aspects of their work.

Methods

- Around 166 000 adults from 16 to 65 years old were surveyed in 24 countries and sub-national regions: 22 OECD member countries – Australia, Austria, Flanders (Belgium), Canada, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Japan, Korea, the Netherlands, Norway, Poland, the Slovak Republic, Spain, Sweden, the United Kingdom (England and Northern Ireland) and the United States; and two partner countries. Data collection for the Survey of Adult Skills took place from 1 August 2011 to 31 March 2012 in most participating countries. In Canada, data collection took place from November 2011 to June 2012; and France collected data from September to November 2012.

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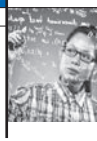
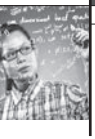


- The language of assessment was the official language or languages of each participating country. In some countries, the assessment was also conducted in widely spoken minority or regional languages.
- Two components of the assessment were optional: the assessment of problem solving in technology-rich environments and the assessment of reading components (see below). Twenty of the 24 participating countries administered the problem-solving assessment and 21 administered the reading components assessment.
- The target population for the survey was the non-institutionalised population, aged 16-65 years, residing in the country at the time of data collection, irrespective of nationality, citizenship or language status.
- Sample sizes depended primarily on the number of cognitive domains assessed and the number of languages in which the assessment was administered. Some countries boosted sample sizes in order to have reliable estimates of proficiency for the residents of particular geographical regions and/or for certain sub-groups of the population, such as indigenous inhabitants or immigrants. The achieved samples ranged from a minimum of approximately 4 500 to a maximum of nearly 27 300.
- The survey was administered under the supervision of trained interviewers either in the respondent's home or in a location agreed between the respondent and the interviewer. The background questionnaire was administered in Computer-Aided Personal Interview format by the interviewer. Depending on the situation of the respondent, the time taken to complete the questionnaire ranged between 30 and 45 minutes.
- After having answered the background questionnaire, the respondent completed the assessment either on a laptop computer or by completing a paper version using printed test booklets, depending on their computer skills. Respondents could take as much or as little time as needed to complete the assessment. On average, the respondents took 50 minutes to complete the cognitive assessment.
- Respondents with very low literacy skills bypassed the full literacy, numeracy and problem solving in technology-rich environment assessments and went directly to a test of basic "reading component" skills instead. This test assessed vocabulary knowledge, the ability to process meaning at the level of the sentence, and to fluently read passages of text. The test had no time limit, but the time taken by respondents to complete the tasks was recorded. The reading components assessment was also taken by all respondents taking the paper version of the assessment.

In 2012 the OECD conducted its first Survey of Adult Skills, which extends the assessment of skills pioneered in PISA to the entire adult population. The survey, a product of the OECD Programme for the International Assessment of Adult Competencies (PIAAC), focuses on skills – literacy, numeracy and problem solving – similar to those assessed in PISA; but the two studies use different assessment tasks, reflecting the different contexts in which 15-year-old students and older adults live.



The surveys have complementary goals: PISA seeks to identify ways in which students can learn better, teachers can teach better, and schools can operate more effectively; the Survey of Adult Skills focuses on how adults develop their skills, how they use those skills, and what benefits they gain from using them. To this end, the Survey of Adult Skills collects information on how skills are used at home, in the workplace and in the community; how these skills are developed, maintained and lost over a lifetime; and how these skills are related to labour market participation, income, health, and social and political engagement.

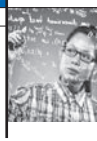
When looking at the social status of the careers boys and girls expect for themselves, PISA 2000 reveals that girls tended to see themselves as working in careers that are more highly valued by society than those cited by boys. On average, the careers that boys cited had a value of 54 on the ISEI index of occupational prestige, while the careers that girls cited had an average value of 57 on the index. The 2012 Survey of Adult Skills found that the occupations in which young women were working at the time of the survey were of slightly higher status (an average score on the ISEI index of 49) than those in which men were working (an average score of 45 on the index) (Table 4.8a).

Adolescent expectations for further schooling also tend to bear only slight resemblance to reality later on. PISA 2003 found that girls tended to be more likely than boys to expect to complete a tertiary degree and less likely than boys to expect to complete their formal education before upper secondary school (Table 4.8b). On average across OECD countries in 2003, 59% of girls but only 51% of boys expected to earn a university degree; but in 2012, only 47% of 25-29 year-old women and 35% of 25-29 year-old men held such a qualification. These differences could partly reflect men's greater propensity to complete a university-level degree at a later age than women. While most women will have completed their tertiary studies by the age of 25, many men will not have done so until their late 20s (DiPrete and Buchmann, 2013). And while, in 2003, 8% of girls and 10% of boys expected to drop out of school with, at most, a lower secondary degree, only 2% of 25-29 year-old women and 3% of 25-29 year-old men who participated in the 2012 Survey of Adult Skills had actually done so.

The dramatic expansion of access to tertiary education over the past decades – and the gender balance in access – is clearly apparent when considering educational attainment among the 50-59 year-olds who participated in the Survey of Adult Skills. As noted above, girls are more likely than boys to expect to earn a tertiary degree, and young women are more likely than young men to hold such a degree. But among people born in the 20 years following the end of World War II, the rates of graduation from university-level educational institutions are lower than those among younger people, and women were, on average, as likely as men to earn a tertiary degree. However, in some countries women were significantly less likely to do so. In Germany and Korea, for example, the proportion of 50-59 year-old women who had earned a tertiary degree by 2012 is 15 percentage points smaller than the proportion of men the same age who had completed university-level education (Table 4.8b).

USING MATHEMATICS IN THE FUTURE

In 2012, PISA asked students about their intentions to use mathematics in their future studies and careers. Students were presented with five pairs of statements and were asked to choose the one



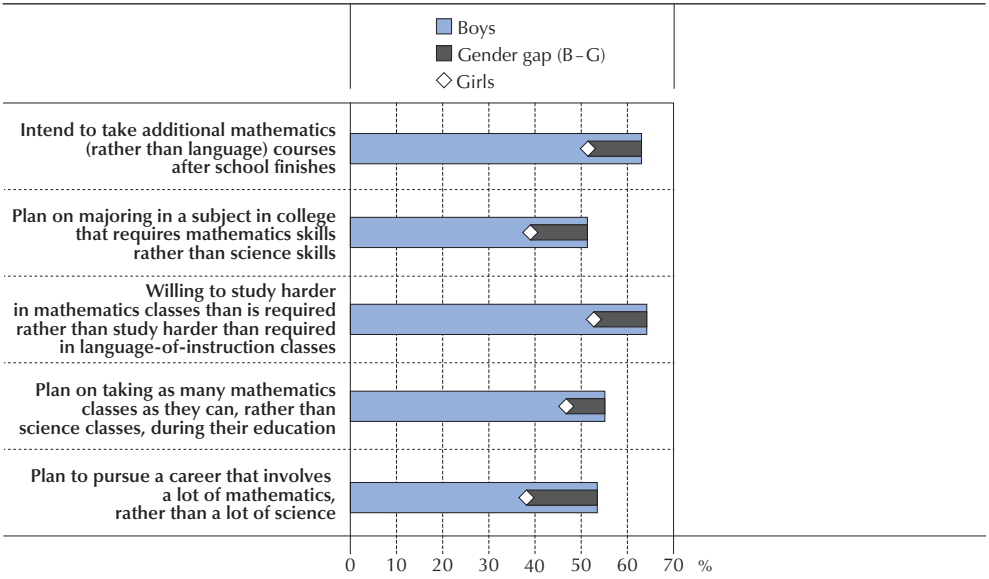
of each pair that best described their intentions and desires for their futures. Students were first asked whether they intend to take additional mathematics courses or additional language courses after their compulsory schooling ends.

In all countries and economies except Albania, Costa Rica, Indonesia, Jordan, Kazakhstan, Malaysia, the Netherlands, Portugal, Shanghai-China, Thailand, Turkey and the United Arab Emirates, boys were more likely than girls to report that they intend to take additional mathematics courses (rather than additional language courses) after school finishes. Across OECD countries, 63% of boys, but only 51% of girls, intend to take additional mathematics courses (Table 4.7).

■ Figure 4.13 ■

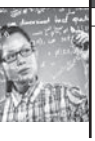
Gender disparities in whether future studies or careers will contain a lot of mathematics, rather than science or language of instruction

OECD average percentage of students



Note: All gender disparities are statistically significant.
Source: OECD, PISA 2006 Database, Table 4.7.

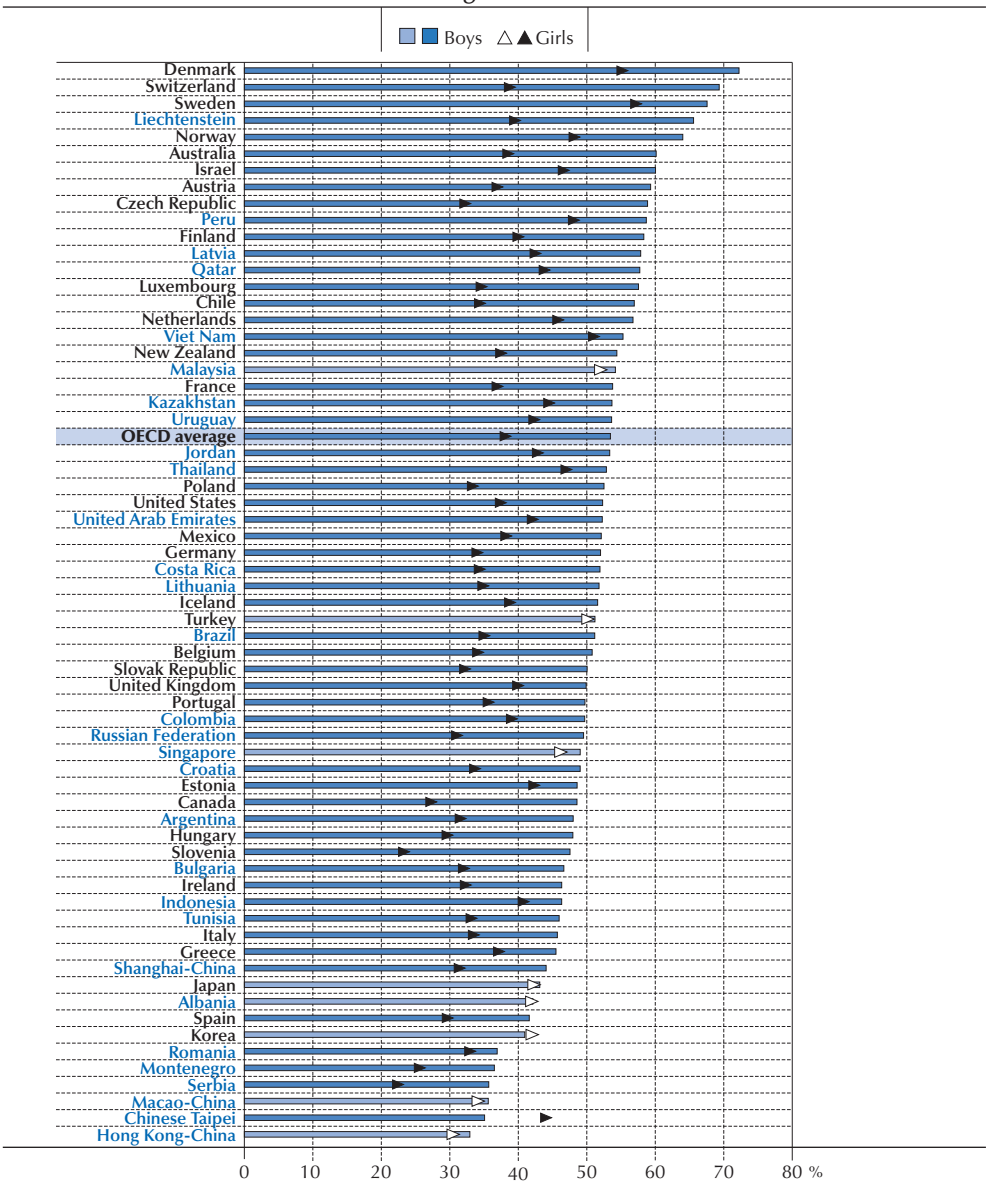
Similarly, boys and girls are not equally likely to plan a career that involves a lot of mathematics, compared to careers that involve more science. On average, 53% of boys, but only 38% of girls, plan to pursue a career that involves a lot of mathematics rather than one that involves a lot of science (Figures 4.13 and 4.14). In addition, evidence from previous PISA cycles – when students were asked about the kind of career they expect to pursue as young adults – suggests that even those girls who envision pursuing scientific careers expect to work in fields that are different from those boys expect to pursue. Girls are, in fact, over-represented among students who expect to work in the health and social fields, while boys are over-represented among 15-year-olds who expect to work as engineers or computer scientists.



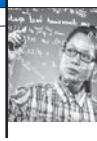
■ Figure 4.14 ■

Gender disparities in whether future careers will contain a lot of mathematics, rather than science, by gender

Percentage of students



Note: Differences between the percentages of boys and girls that are statistically significant are marked in a darker tone.
Countries and economies are ranked in descending order of the percentage of boys who reported that their future careers will contain a lot of mathematics, rather than science.
Source: OECD, PISA 2006 Database, Table 4.7.



WHAT HAPPENS AFTER COMPULSORY EDUCATION

Previous sections have shown differences between boys and girls in their expectations for their future. But what do we know about the circumstances that young adults face after they have left school? How proficient are young adults in some fundamental skills, like literacy and numeracy? How do boys and girls make the transition from compulsory schooling into further education, training or the labour market? Can countries maintain and build on the skills children acquire in school? Results from the Survey of Adult Skills can answer some of these questions.

The Survey of Adult Skills differs in some significant ways from PISA. First, the sample size for specific age groups is relatively small, so that it may be difficult to accurately estimate differences in proficiency between young men and women. Second, while the main assessments of PISA, up to 2012, were delivered in paper booklets that were completed by students in pen or pencil, the Survey of Adult Skills was conducted on computer. Chapter 2 in this report suggests that males may have an advantage in computer-based assessments because those assessments generally ask respondents to navigate through connected web pages, scroll down pages, use hyperlinks, etc. These tasks require the kinds of spatial skills in which males tend to excel.

Gender differences in literacy and numeracy among young adults

The Survey of Adult Skills finds that, on average among 16-29 year-olds, young women outperform young men in literacy by an average of one score point – meaning that there is, effectively, no gender difference in literacy proficiency. In as many as 15 countries, young men and women show similar levels of literacy proficiency; but in Denmark, Estonia, France, Italy, Norway, Poland and the Russian Federation, young women outperform young men in literacy. Spain is the only country where young men outperform young women in literacy, although the difference (three score points) is small (Table 4.10a). Figure 4.15 shows that, while gender differences in literacy proficiency among 16-29 year-olds are either small or non-existent, among the lowest performers (the 10th percentile), young women tend to outperform young men, while among the highest performers (the 90th percentile), young men tend to outperform young women (Table 4.10d).

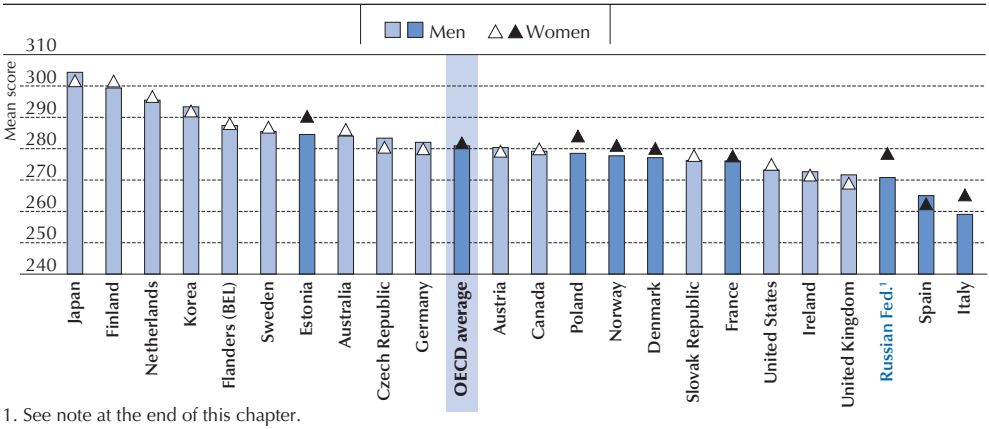
At the same time, the data in Table 4.10a show that young men outperform young women by a larger margin in numeracy. On average across the OECD countries with available data, 16-29 year-old men outperform 16-29 years old women by eight score points (16% of a standard deviation). This gender gap in numeracy proficiency in favour of young men is observed in all countries and economies that participated in the 2012 Survey of Adult Skills, except Italy, where there is no gender gap, and the Russian Federation, where young men underperform compared to young women. The gender gap is particularly pronounced in Canada, Finland, France, Ireland, the United Kingdom and the United States, where the difference in numeracy proficiency between the genders is over 10 score points (or one fifth of a standard deviation).

Young men's advantage in numeracy tends to be particularly large among the highest-achieving students (90th percentile). On average across OECD countries with available data, young men score 11 points higher than young women in numeracy; in the United States, they score an average of 20 points higher. Conversely, the gender gap in numeracy proficiency favouring young men

among the lowest achievers (10th percentile) is statistically significant only in Canada, Finland, France, Germany, Spain and Sweden. In the Russian Federation, among the lowest performers, young women score an average of 9 points higher than young men (Table 4.10a).

■ Figure 4.15 ■

Gender differences in literacy proficiency among 16-29 year-olds

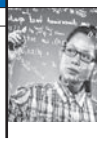


1. See note at the end of this chapter.
Note: Gender differences that are statistically significant are marked in a darker tone.
Countries and economies are ranked in descending order of men's mean score in literacy.
Source: OECD, PIAAC Database, Table 4.10a.

These data confirm evidence emerging from PISA on boys' overachievement in mathematics, particularly among top performers; but the data also indicate that, as boys and girls leave compulsory schooling and enter either further education and training or work, the gap in literacy proficiency narrows considerably. Indeed, if anything, young men tend to outperform young women.

Inter-generational differences

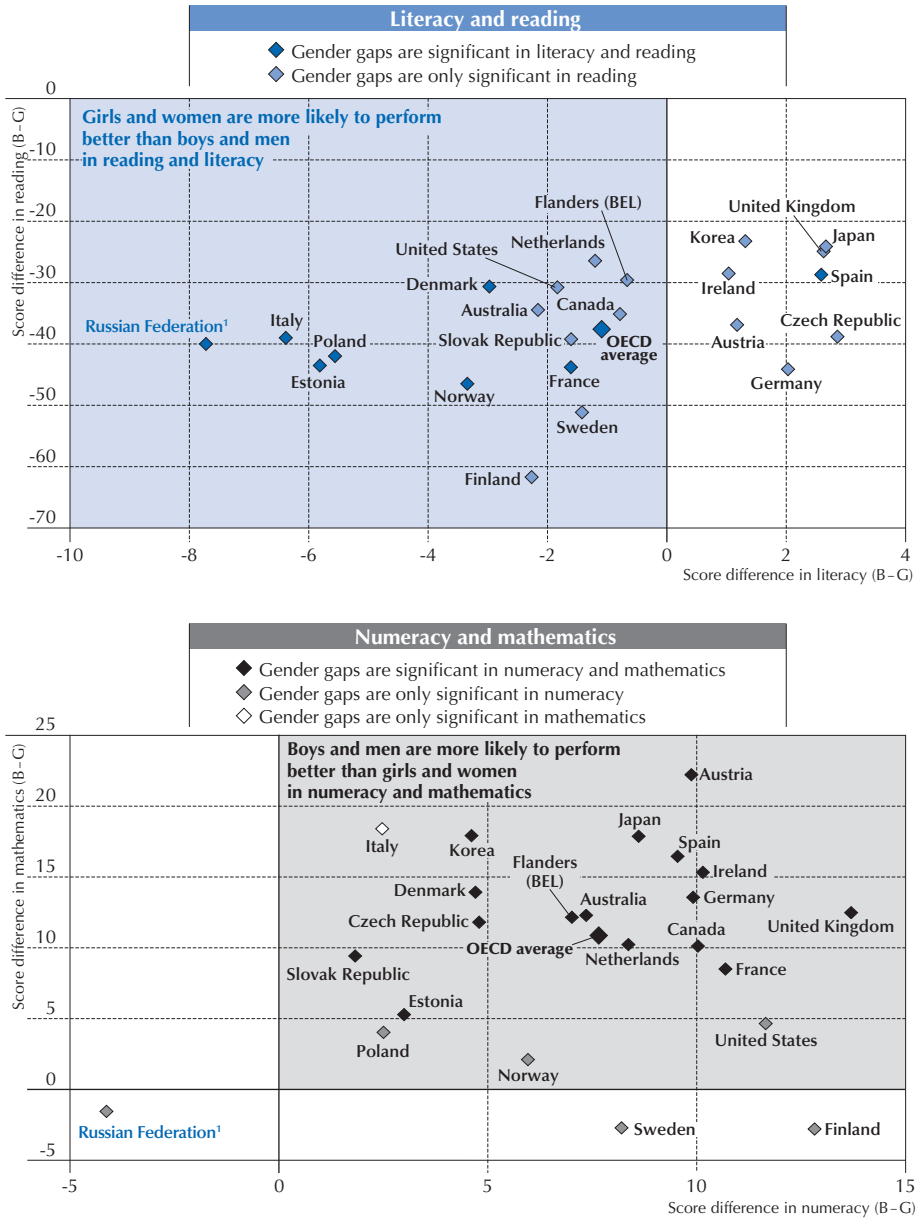
Chapter 1 discusses the evolution of education and labour market opportunities for men and women over the past 50 years. Tables 4.10a, 4.10b, 4.10c and 4.10d show that, in every country with available data (except the United Kingdom and the United States), 50-65 year-olds tend to have lower numeracy and literacy proficiency than 16-29 year-olds, and that the difference between the two age groups in both numeracy and literacy proficiency tends to be much more pronounced among women than among men. For example, in Korea, 16-29 year-old men score 285 points and women the same age score 280 points in numeracy, while 50-65 year-old men score 247 points and women the same age score an average of 228 points in numeracy. The difference in performance between the two age groups is 37 score points among men and 52 score points among women. This means that the age effect on the difference between men's and women's proficiency in numeracy is 14 score points. The gender gap in numeracy proficiency is also considerably narrower between younger men and women than it is between older men and women in Germany, where the age effect on the difference between men's and women's numeracy proficiency is 16 score points, in Flanders (Belgium), where it is 14 points, and in Australia, Canada, the Netherlands, Norway and Sweden, where it is 8 points or more (Figure 4.18 and Table 4.10d).



■ Figure 4.16 ■

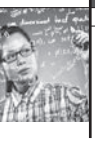
Gender differences in performance among young adults and among 15-year-olds

As measured by the 2012 Survey of Adult Skills (16-29 year-olds) and PISA 2012 (15-year-olds)



1. See note at the end of this chapter.

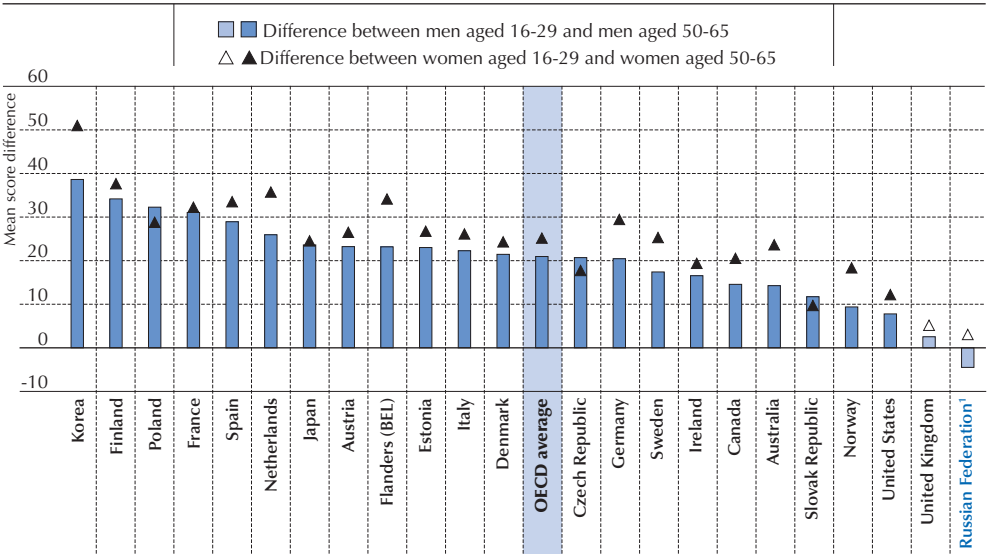
Source: OECD, PISA 2009, PISA 2012 and PIAAC Databases, Tables 1.2a, 1.3a and 4.10a.



The difference in literacy proficiency between younger and older women compared to the difference between younger and older men – four score points – is similar to that in numeracy proficiency – five score points. However, the difference is large – more than 10 score points – in Korea and Flanders (Belgium). In Flanders (Belgium), 16-29 year-old women score 288 points, on average, in literacy while 50-65 year-old women score 254 points, on average – a difference of 34 points, the equivalent of nearly five years of formal schooling (OECD, 2013a). Among men, 16-29 year-olds score 287 points, on average, while 50-65 year-olds score 264 points, on average – a difference of 23 points (Figure 4.17 and Table 4.10d).

■ Figure 4.17 ■

Gender differences in literacy proficiency between younger and older adults



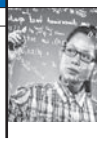
1. See note at the end of this chapter.

Note: Differences among men and differences among women that are statistically significant are marked in a darker tone.

Countries and economies are ranked in descending order of the mean score difference in literacy between men aged 16-29 and men aged 50-65 (men aged 16-29 – men aged 50-65).

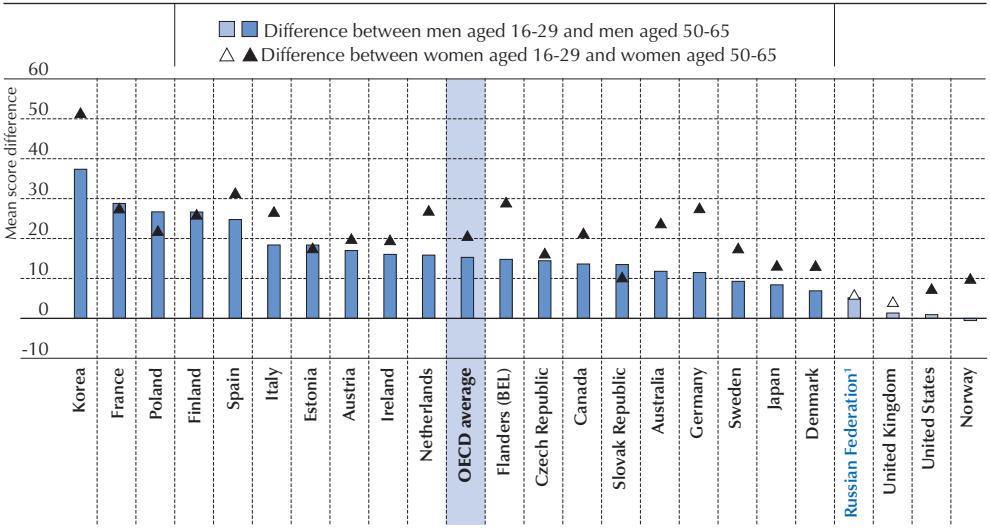
Source: OECD, PIAAC Database, Table 4.10d.

These results suggest that young men tend to be more proficient in literacy than would be expected given how they perform in reading, compared to girls, at the age of 15. The results also suggest that young women do not catch up with young men in numeracy proficiency after they leave compulsory schooling. Results from the Survey of Adult Skills indicate that the gender gap in both numeracy and literacy proficiency differs greatly among different age groups, such that among people in their 30s, 40s, 50s and 60s, men outperform women in both literacy and numeracy by a considerable margin, while among younger age groups, there is no or only a small gap in literacy proficiency in favour of women while the gender gap in numeracy in favour of men is even smaller.



■ Figure 4.18 ■

Gender differences in numeracy proficiency between younger and older adults



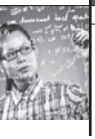
1. See note at the end of this chapter.

Note: Differences among men and differences among women that are statistically significant are marked in a darker tone.
Countries and economies are ranked in descending order of the mean score difference in numeracy between men aged 16-29 and men aged 50-65 (men aged 16-29 – men aged 50-65).

Source: OECD, PIAAC Database, Table 4.10d.

The comparatively lower literacy and numeracy proficiency among women in their 50s and 60s (compared to men in their 50s and 60s and compared to younger women) may be partly due to the fact that women who were born in the decades immediately after the Second World War had fewer education opportunities compared to men their age and especially compared to younger women (see Chapter 1 on the long-term trends in educational attainment). Moreover, women who were born between the late 1940s and the late 1950s had fewer opportunities than men and younger women to enter the labour market, remain employed once they started a family, and occupy positions that enabled them to practice and maintain the level of skills they had acquired while in school. Because of family responsibilities and the unequal distribution of housework, these women may also have enjoyed fewer opportunities to maintain their skills while at home.

The fact that the Survey of Adult Skills is conducted on computers may account for at least some of the improvement in reading/literacy performance between 15-year-old boys and 16-29 year-old young men. However, 15-year-old boys also underachieve in digital reading – and again by a large margin – compared to 15-year-old girls (although this difference in performance is narrower than the gender gap in print reading). Similarly, the types of texts to be read and the construction of the questions asked also differ between PISA and the Survey of Adult Skills (see the PISA and PIAAC Assessment Frameworks for more details). But again, 15-year-old boys underachieve compared to girls – and by a wide margin – on the types of PISA reading tasks that are most similar to the literacy questions used in the Survey of Adult Skills (Tables 1.9a, 1.9b, 1.9c, 1.9d and 1.9e).



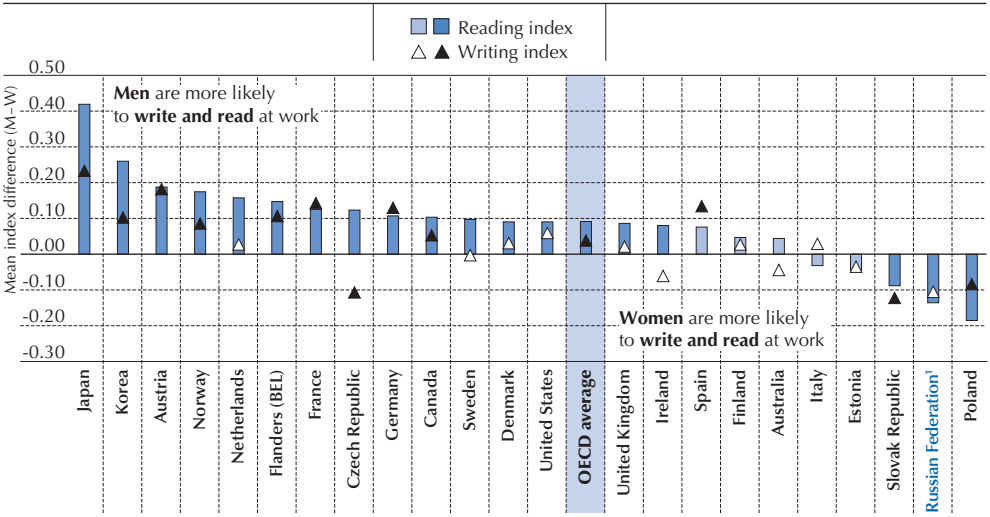
These results imply that it is not the difference between the two surveys that accounts for the narrowing of the gender gap in reading between 15-year-olds and 16-29 year-olds. Rather, it may be that boys develop cognitively and emotionally more slowly than girls, and this may be reflected in the data that show young men "catching up" with young women's proficiency in literacy. In addition, the school environment may not cater particularly well to boys' interests and dispositions. So while boys in school are considerably less likely than girls to engage in activities that help them to become more proficient in literacy, such as reading for enjoyment, young men may be much more inclined pursue these activities at work or at home.

Gender differences in using skills

The Survey of Adult Skills contains detailed information on whether respondents read or write at home or at work, the type of reading and writing activities in which they are engaged (Tables 4.13a, 4.13b and 4.13c), and the types of skills they use at work (Tables 4.11a, 4.11b, 4.11c, 4.12a, 4.12b and 4.12c). On average among 16-29 year-olds, there are no gender differences in how much reading or writing young men and women do at work, although young men are more likely than young women to use numeracy, information and communication technologies (ICT) and problem-solving skills at work (Table 4.11a). However, among workers in their 30s, 40s and particularly workers in their 50s and 60s, men appear to be considerably more likely than women to read and write at work, as well as to use numeracy, ICT and problem-solving skills.

■ Figure 4.19 ■

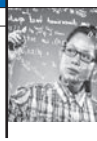
Differences in reading and writing activities at work, by gender



1. See note at the end of this chapter.

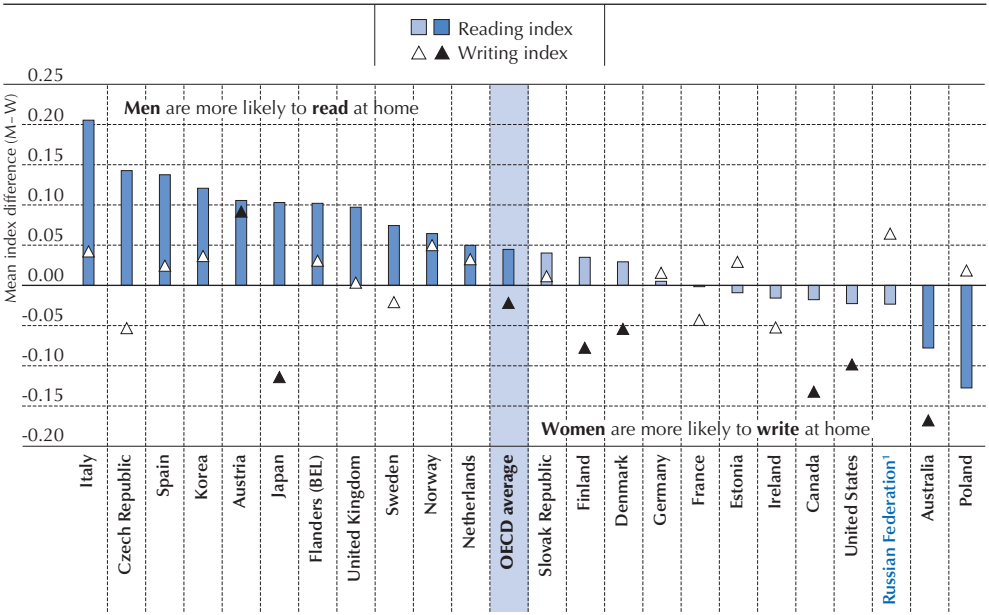
Note: Gender differences in reading or writing activities at work that are statistically significant are marked in a darker tone.
Countries and economies are ranked in descending order of the mean index difference in reading at work between men and women (M–W).

Source: OECD, PIAAC Database, Table 4.13a.



■ Figure 4.20 ■

Differences in reading and writing activities at home, by gender



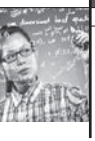
1. See note at the end of this chapter.

Note: Gender differences in reading or writing activities at work that are statistically significant are marked in a darker tone.
Countries and economies are ranked in descending order of the mean index difference in reading at home between men and women (M-W).

Source: OECD, PIAAC Database, Table 4.13a.

While teenage boys may be less likely than teenage girls to engage in activities that allow them to practice and build their literacy skills, as they mature they are required to read and write in their work as much as, if not more than, women are. Thus they are often able to catch up with, if not surpass, women's skills in literacy. The data shown in Figures 4.19 and 4.20 suggest that not only do men and women read and write to different degrees at work, they also read and write different materials. At work, men are more likely to read directions and instructions, professional journals or publications, manuals or reference materials, diagrams, maps or schematics, and to write reports or fill in forms. By contrast, women are more likely to read letters, memos or e-mails and books at work, and they are more likely to write letters, memos or e-mails. At home, men are also more likely to read professional journals or publications, manuals or reference materials, diagrams, maps or schematics, while women are more likely to read directions or instructions, letters, memos or e-mails, books and financial statements, and they are more likely to write letters, memos or e-mails.

These findings reveal that reading and writing patterns vary much more at work than at home, and that women are more involved in the interpersonal communication aspects of reading and writing. Even though women now have far more professional opportunities open to them



than ever before, they are still responsible for most secretarial tasks at work, as is evident in the frequency with which they read and write letters, memos and e-mails. Men, on the other hand, tend to have more opportunities to engage with and decipher a variety of texts and to perform more complex tasks, such as writing reports.

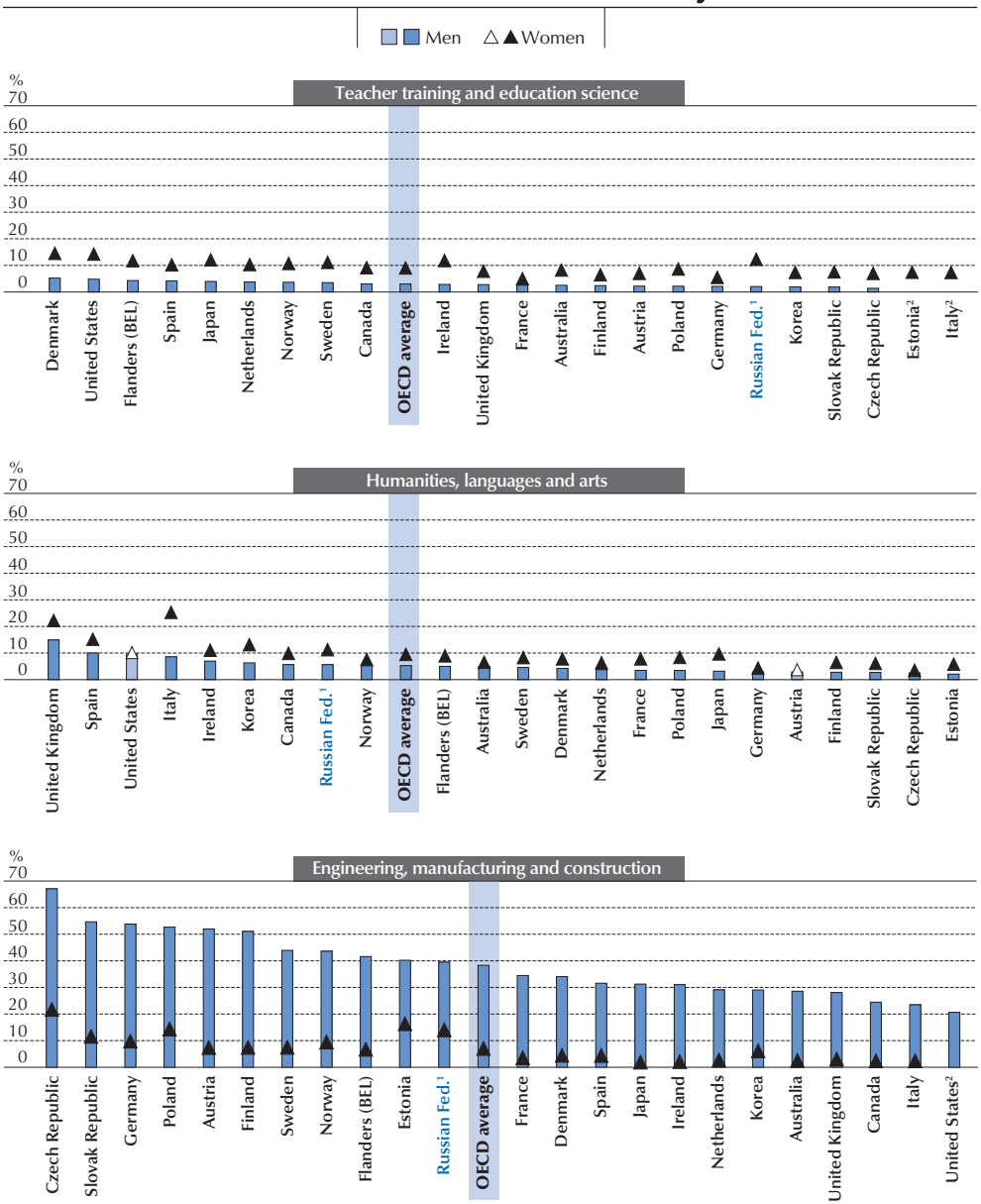
Data presented in Table 4.14 and Figure 4.21 suggest that, just as 15-year-old boys and girls hold different expectations for the field in which they expect to be working as young adults (boys are significantly more likely to expect to work in science, technology, engineering and mathematics [STEM] occupations), men and women who were surveyed in the 2012 Survey of Adult Skills reported that they studied different subjects. Men are, on average, 32 percentage points more likely than women to have studied engineering, manufacturing and construction (38% of men reported that they had studied these subjects while only 7% of women so reported) and are 3 percentage points more likely to have studied science, mathematics and computing (10% of men reported that they had studied these subjects while 7% of women so reported). By contrast, women are 13 percentage points more likely than men to have studied health and welfare (15% of women and 4% of men so reported), 6 percentage points more likely to have studied education science and to have enrolled in teacher training (9% of women and 3% of men so reported), and 8 percentage points more likely to have studied social sciences, business and law (23% of women and 15% of men so reported).

Differences in the percentage of men and women who reported that they had studied engineering, manufacturing and construction are larger than 20 percentage points in all countries and economies examined. These differences are particularly wide in the Czech Republic, Finland, Germany and the Slovak Republic, where men are over 40 percentage points more likely than women to have studied these subjects, according to their reports. Differences are smallest in Canada, Estonia, Italy, Korea and the United Kingdom. In all of these countries, except Estonia, the absolute gender difference is smaller because fewer individuals have studied these fields, not because there is greater gender equity in enrolment in these fields. Similarly, countries showing a small difference in the percentage of men and women who reported that they had studied health and welfare tend to be those where these programmes attract comparatively fewer candidates. For example, Italy, Korea, Poland and the Russian Federation show a small or no gender gap in these fields – but also relatively few adults reported that they had studied these subjects.

Dimensional comparison theory suggests that, since boys and girls hold different career expectations, and that the fields of study men and women reported having pursued are in line with gender-stereotypical notions of what females and males "normally" study, women may need to have considerably better numeracy skills than their male counterparts before they would choose to enrol in STEM courses and opt to work in STEM professions. Results presented in Table 4.15 suggest that, contrary to expectations, women who work in STEM occupations tend to have lower numeracy scores than men who work in the same occupations. On average, men working in STEM occupations score 311 points in numeracy while women score 302 points. This 10 score-point difference is the equivalent of around one-fifth of a standard deviation. The difference is particularly large in Denmark and Spain, where men who work in STEM occupations score 20 points higher in numeracy than women who work in the same occupations.

■ Figure 4.21 ■

Gender differences in field of study



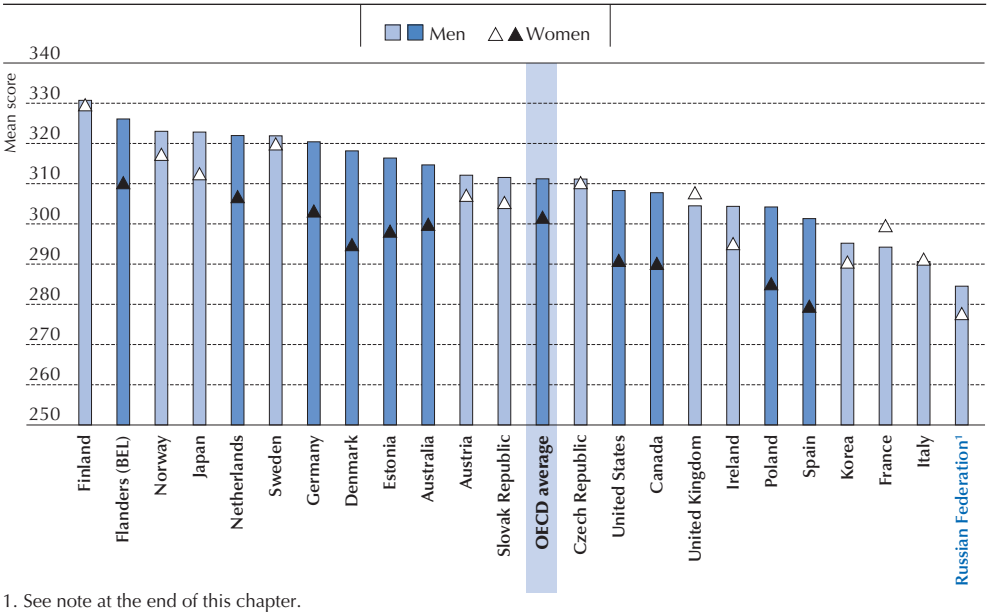
1. See note at the end of this chapter.
2. Sample size too small.

Note: Gender differences that are statistically significant are marked in a darker tone.
Countries and economies are ranked in descending order of the percentage of men in each field of study.
Source: OECD, PIAAC Database, Table 4.14.

There is no such difference observed in Austria, the Czech Republic, Finland, France, Ireland, Italy, Japan, Korea, Norway, the Russian Federation, the Slovak Republic, Sweden and the United Kingdom. In no country do women who work in STEM fields have higher numeracy scores than men who work in STEM fields (Figure 4.22 and Table 4.15).

■ Figure 4.22 ■

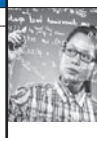
Gender differences in numeracy proficiency among men and women who work in STEM occupations



1. See note at the end of this chapter.
Note: Gender differences that are statistically significant are marked in a darker tone.
Countries and economies are ranked in descending order of the numeracy score (in the 2012 Survey of Adult Skills) of men who work in STEM occupations.
Source: OECD, PIAAC Database, Table 4.15.

FINANCIAL LITERACY

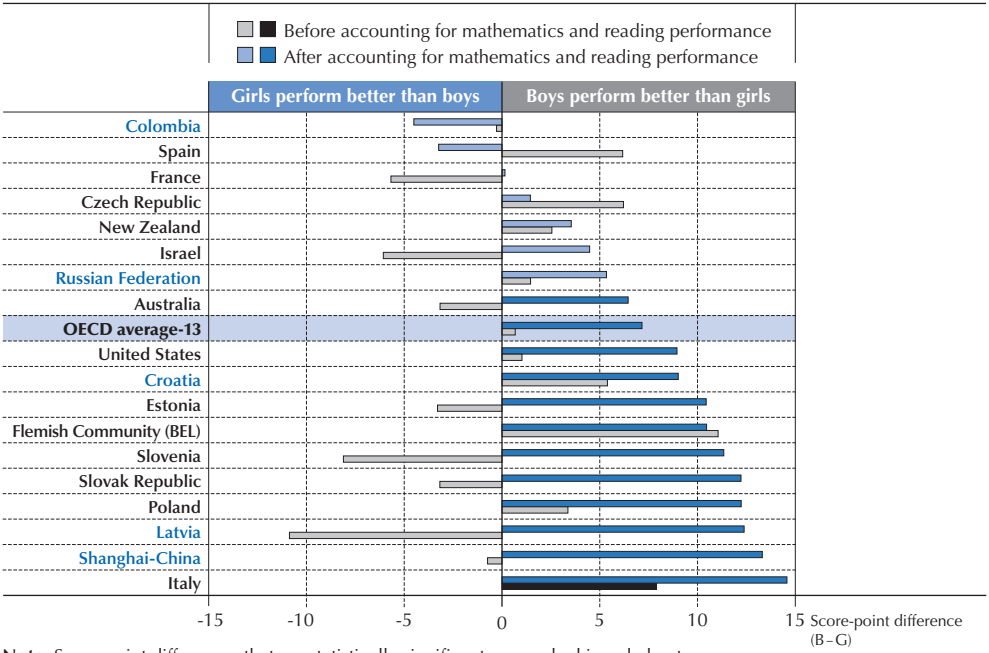
Financial literacy has become an essential skill for full participation in society. The complexity of the financial products, services and systems now available means that young men and women need to be able to make the most of the opportunities these offer, but also to understand the risks and uncertainties inherent in different products and services. Young men and women will probably bear more financial risks in adulthood due to increased life expectancy, a decrease in welfare and occupational benefits, and uncertain economic and job prospects. In addition, 15-year-old boys and girls face immediate financial decisions: some may already be consumers of financial services, such as bank accounts, and most will have to decide, with their parents, whether to continue with post-compulsory education or enter the labour market, and how to finance further education and/or training if they decide to pursue that option.



Results presented in Table 4.16a suggest that there are no gender differences in financial literacy scores in most countries and economies. Only in Italy do boys perform better than girls, but only by 8 score points, which is a relatively small difference (one proficiency level in financial literacy is the equivalent of 75 points). However, the results in Table 4.16c suggest that boys tend to perform better than girls in financial literacy after accounting for students' competencies in other subjects. After accounting for students' performance in mathematics and reading, for example, boys perform slightly better than girls in Australia, Croatia, Estonia, the Flemish Community of Belgium, Italy, Latvia, Poland, Shanghai-China, the Slovak Republic, Slovenia and the United States. This means that among boys and girls of similar ability in mathematics and reading, boys perform better in financial literacy than girls. However, these differences are not very large. Only in Italy is the score-point difference between boys and girls relatively large (15 score points), after accounting for mathematics and reading performance (Table 4.16c).

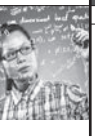
■ Figure 4.23 ■

Gender differences in financial literacy performance



Note: Score-point differences that are statistically significant are marked in a darker tone.
Countries and economies are ranked in ascending order of the score-point difference in financial literacy performance between boys and girls, after accounting for mathematics and reading performance.
Source: OECD, PISA 2012 Database, Table 4.16c.

Girls and boys are not equally represented among high- and low-performing students (Table 4.16b). Results in Table 4.16b show that, on average across the 13 participating OECD countries and economies, 11% of boys and 8% of girls perform at proficiency Level 5 in financial literacy (the highest level), while 17% of boys and 14% of girls perform at or below Level 1.

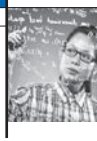


The fact that there are more boys than girls among the lowest performers (at or below Level 1) and among the top performers (at Level 5) also means that the distribution of financial literacy proficiency is more dispersed among boys than among girls. (This is confirmed by a higher standard deviation of financial literacy performance among boys than among girls; Table 4.16a.) In mathematics, on average across OECD countries and economies, there are more boys than girls among the top performers (17% of boys and 11% of girls perform at or above Level 5), but there are about as many boys as girls among the lowest performers. In reading, on average across OECD countries and economies, there are more girls than boys among the top performers (11% girls and 7% boys perform at or above Level 5) and more boys than girls among the lowest performers (22% boys and 12% girls score at or below Level 1).

Another way of assessing gender differences in financial literacy is to look at the performance distribution. In France, Israel, Italy, New Zealand and Poland, among students performing at or above the 90th percentile (top performers), boys perform better than girls, while among students performing at or below the 25th and 10th percentiles (low performers), girls in Australia, France, Israel and Slovenia tend to perform better than boys. In other words, among the highest achievers, boys outperform girls in five countries, while among low and the lowest achievers, girls outperform boys in four countries (Table 4.16a). Overall, these results suggest that when targeting students with poor financial literacy, it is important to keep in mind that low-performing boys are likely to lack proficiency in several skills, while girls may need targeted help to develop the specific skills needed to attain the highest levels of proficiency in financial literacy.

While PISA shows comparatively small gender differences in financial literacy, several studies do find gender differences in financial literacy among adults (Agnew et al., 2013; Arrondel et al., 2013; Fornero and Monticone, 2011; Crossan et al., 2011; Lusardi and Mitchell, 2011). The fact that gender differences are consistently reported among adults but not among 15-year-old students may be due to the fact that, at least to some extent, gender differences in adulthood are related to the different socio-economic characteristics of men and women (OECD, 2013b). For example, as boys and girls grow up, they may be exposed to different opportunities to learn and improve their financial competencies, such as different access to labour and financial markets, and therefore they may develop different levels of financial knowledge and different financial strategies over time.

The finding that girls in many countries now surpass boys not only in educational attainment but also in the hopes and plans they have for high-status careers holds the promise of narrowing the gender gap in the labour market in the not-too-distant future (Shavit and Blossfeld, 1993; Marks, 2008). But gender inequalities are also created because of persistent occupational segregation by gender. Men and women not only reach different positions in the workplace hierarchy, and are asked to use their skills differently when they get there, they also occupy different niches in the labour market. Women are predominantly employed in fields where they have fewer opportunities to express their potential, and develop and maintain their skills – often at the price of lower wages and slower career paths (Charles and Grusky, 2004).



Ambition and educational attainment are only two of the elements that affect the gender balance in the labour market. Perhaps as younger generations move into the workforce, the gender disparities observed in the results of the 2012 Survey of Adult Skills will gradually narrow. But without interventions to tackle boys' underperformance in reading and girls' lack of confidence in their ability to solve mathematical problems, gender equality in society at large will remain elusive.

Notes

1. The questionnaire asks students about ISCED 3-5 programmes they are interested in.

2. See Sikora and Pokropek (2011) for a detailed description of how this index was calculated.

3. It is important to bear in mind that the categories of engineering/computing and health used in this analysis do not include all science-related occupations. These two categories account for about 75% of plans for science-related employment. Some science-related occupations, such as "mathematician", "physicist" or "psychologist", are neither in the engineering/computing nor in the health category. Nevertheless, it is possible to relate gender differences in these two fields to the overall patterns of segregation previously found in studies of employment and tertiary enrolments.

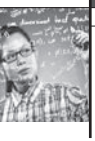
Note regarding Israel

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Note regarding the Russian Federation in the Survey of Adult Skills

Readers should note that the sample for the Russian Federation does not include the population of the Moscow municipal area. The data published, therefore, do not represent the entire resident population aged 16-65 in Russia but rather the population of Russia excluding the population residing in the Moscow municipal area.

More detailed information regarding the data from the Russian Federation as well as that of other countries that participated in the Survey of Adult Skills can be found in the *Technical Report of the Survey of Adult Skills* (OECD, 2013c).



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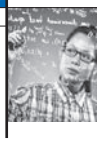

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