



## 2

# The Reading and Learning Habits of 15-Year-Olds

Students' reading and learning habits not only affect their performance in school, but can influence how they live their lives after their school careers. Based on students' own reports, this chapter examines country differences in how much students read for enjoyment, what they read, and how much they enjoy reading. It also discusses students' knowledge and use of effective learning strategies.

Chapter 1 shows that students who reported being highly engaged in reading activities and those who approach learning positively are more proficient readers than students who reported not being engaged in reading activities and having less positive approaches to learning.

This chapter explores to what extent countries differ in how much their students reported reading for enjoyment, in what they reported reading and in how much they reported enjoying reading, as well as whether students have “learned how to learn” by favouring and adopting effective learning strategies.

The reading and learning habits students develop as youngsters not only affect their current reading performance, but are also important outcomes in their own right and can shape students’ future lifestyles and practices.

## PROFILES OF READERS

The six groups into which Chapter 1 classified students, depending on their characteristics as learners, provide the starting point for the analysis presented in this chapter.

- **Group 1 – Deep and Wide Readers:** High levels of awareness of effective strategies to understand, remember and summarise information, and regular reading of all materials (Table III.1.27). Across OECD countries, 19% of students belong to Group 1.
- **Group 2 – Deep and Narrow Readers:** High levels of awareness of effective strategies to understand, remember and summarise information, and regularly reading of magazines and newspapers (Table III.1.27). Across OECD countries, 25% of students belong to Group 2.
- **Group 3 – Deep and Highly Restricted Readers:** High levels of awareness of effective strategies to understand, remember and summarise information, and very limited reading practices (Table III.1.27). Across OECD countries, 29% of students belong to Group 3.
- **Group 4 – Surface and Wide Readers:** Low levels of awareness of effective strategies to understand, remember and summarise information, and very limited reading practices (Table III.1.27). Across OECD countries, 5% of students belong to Group 4.
- **Group 5 – Surface and Narrow Readers:** Low levels of awareness of effective strategies to understand, remember and summarise information, and regular reading of magazines and newspapers (Table III.1.27). Across OECD countries, 10% of students belong to Group 5.
- **Group 6 – Surface and Highly Restricted Readers:** Low levels of awareness of effective strategies to understand, remember and summarise information, and very limited reading practices (Table III.1.27). Across OECD countries, 13% of students belong to Group 6.

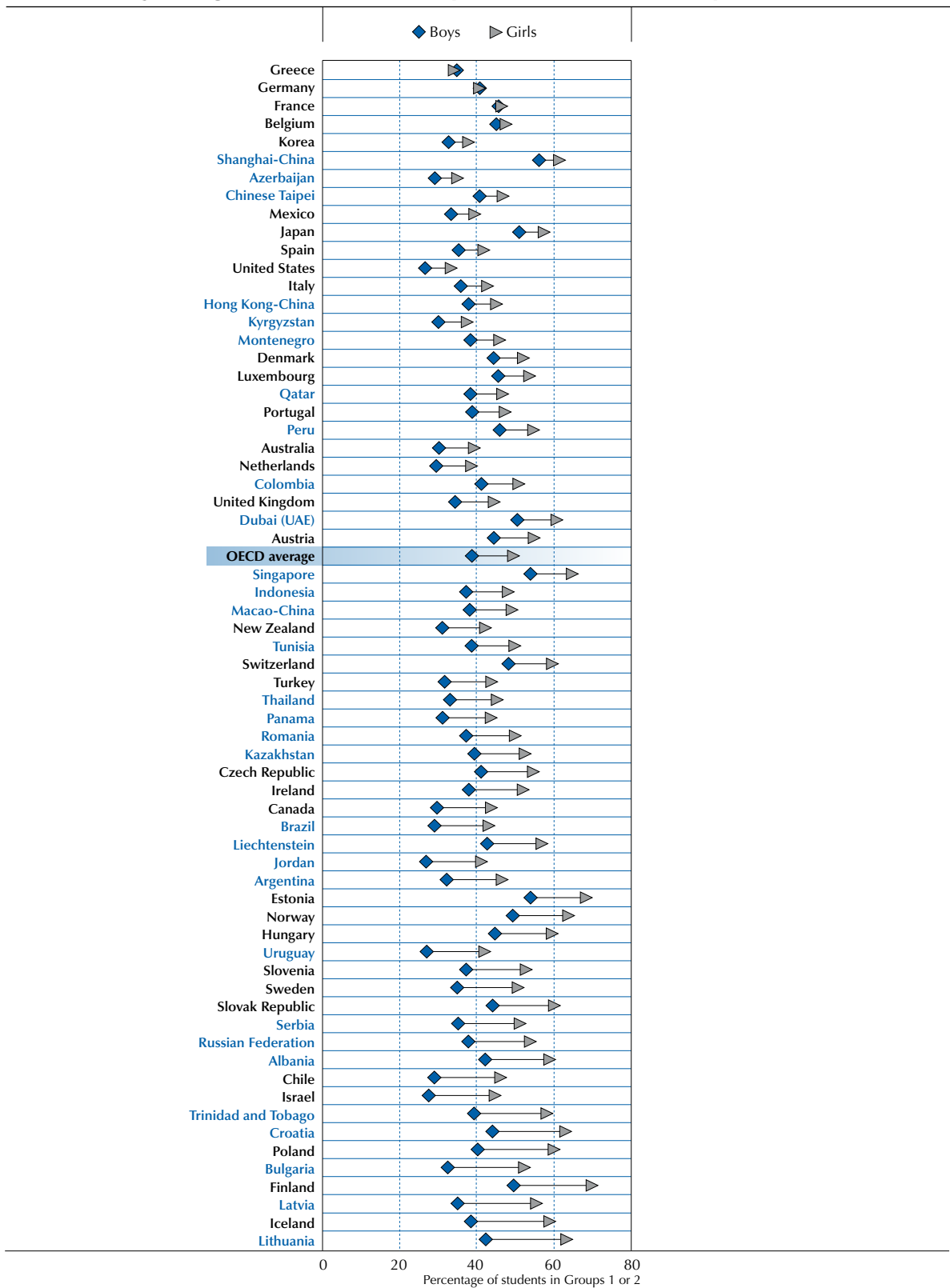
Countries vary widely in the proportion of their students who fall into each of the six groups: more than 30% of 15-year-olds in the partner countries and economies Kazakhstan, the Russian Federation, Albania, Singapore, Shanghai-China, Indonesia, Peru and Thailand belong to Group 1, while in Slovenia, Greece, the Czech Republic, the Slovak Republic, Poland and the Netherlands, less than 15% of students read regularly and have high levels of awareness about effective strategies to understand, remember and summarise information. In the partner countries and economy Albania, Shanghai-China and Singapore there is a particularly high prevalence of “Group 1 students” and a particularly low prevalence of “Group 6 students”. These are countries and economies where most students read a variety of materials frequently and critically, and where few students do not read any materials for enjoyment regularly and show low levels of awareness about effective learning strategies. In contrast, in Jordan, 18% of students belong to Group 6 and 17% of students belong to Group 1. Few students in Jordan read a variety of materials frequently and critically, while many other students there do not read for enjoyment regularly and are unaware of effective learning strategies.

The difference in the share of boys and girls who approach their learning positively and who read a wide variety of texts for enjoyment, in other words, students who are “deep and wide” readers, is, on average, approximately 11 percentage points across OECD countries (Table III.1.29). The gender gap in the share of “deep and wide” readers is relatively small – less than 10 percentage points – in France, Japan, Korea and the partner countries Montenegro, Colombia, Jordan, Qatar, Kyrgyzstan and Azerbaijan, while it is above 20 percentage points in Finland and the partner countries Lithuania and Albania. Boys are under-represented among students who are “deep and wide” readers in all the PISA participating countries and economies; and they are over-represented among students who read very little and who are not aware of effective learning strategies, *i.e.* “narrow and surface” readers.



■ Figure III.2.1 ■

### Share of boys and girls who are either deep and wide readers or deep and narrow readers



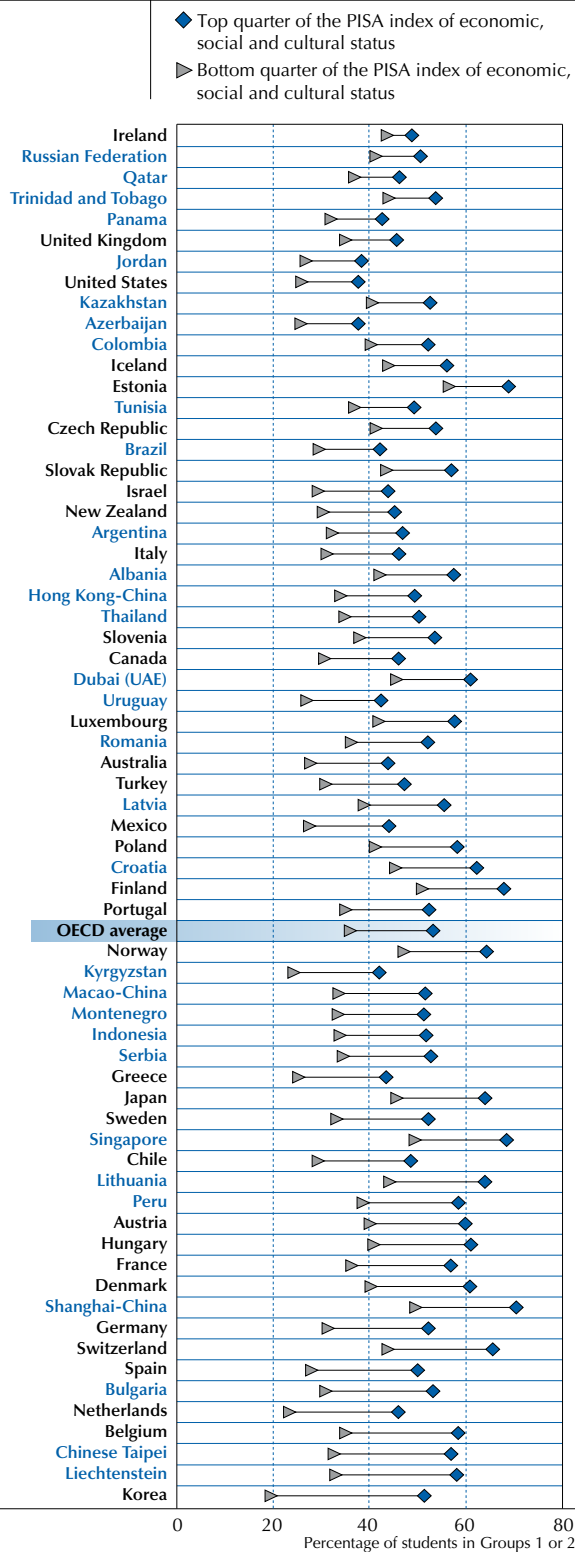
Countries are ranked in ascending order of the percentage difference of girls and boys in Groups 1 or 2.

Source: OECD, PISA 2009 Database, Table III.1.29.

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■ Figure III.2.2 ■

### Share of socio-economically advantaged and disadvantaged students who are either deep and wide readers or deep and narrow readers



Countries are ranked in ascending order of the percentage difference of students in Groups 1 or 2 in the top and bottom quarter of the PISA index of economic, social and cultural status.

Source: OECD, PISA 2009 Database, Table III.1.30.

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The over-representation of boys among Group 6 readers is less than five percentage points in 14 countries and economies, while it is greater than 10 percentage points in Canada, Sweden, Poland, Israel, Iceland and Australia and the partner countries Serbia, the Russian Federation, Brazil, Bulgaria and Latvia (the OECD average is 8%).

Similarly, Figure III.2.2 shows that the difference in the share of “deep and wide” readers from a socio-economically disadvantaged or advantaged background is about 13 percentage points on average across the OECD countries. In 14 OECD countries and five partner countries and economies, the difference in the share of “deep and wide readers” between socio-economically advantaged and disadvantaged students is greater than 15 percentage points. Only in the partner countries Colombia, Argentina, Tunisia, Trinidad and Tobago and Jordan is there no observed difference in the share of socio-economically advantaged and disadvantaged students who belong to Group 1. Socio-economically advantaged students, on the other hand, are particularly over-represented among “deep and wide” readers in Korea and the partner countries Singapore and Liechtenstein. In all these countries, the difference in the share of socio-economically advantaged and disadvantaged students who belong to Group 1 is 20 percentage points or more. A similar picture emerges when examining whether different socio-economic groups are over- or under-represented among “surface and narrow” readers: on average in the OECD area, the difference between the share of socio-economically advantaged and disadvantaged students who belong to Group 6 is 10 percentage points. In Korea, Belgium and the partner country Uruguay, the under-representation of socio-economically advantaged students among Group 6 readers is 15 percentage points or more (Table III.1.30).

## THE READING HABITS OF 15-YEAR-OLD STUDENTS

### How often do students read for enjoyment?

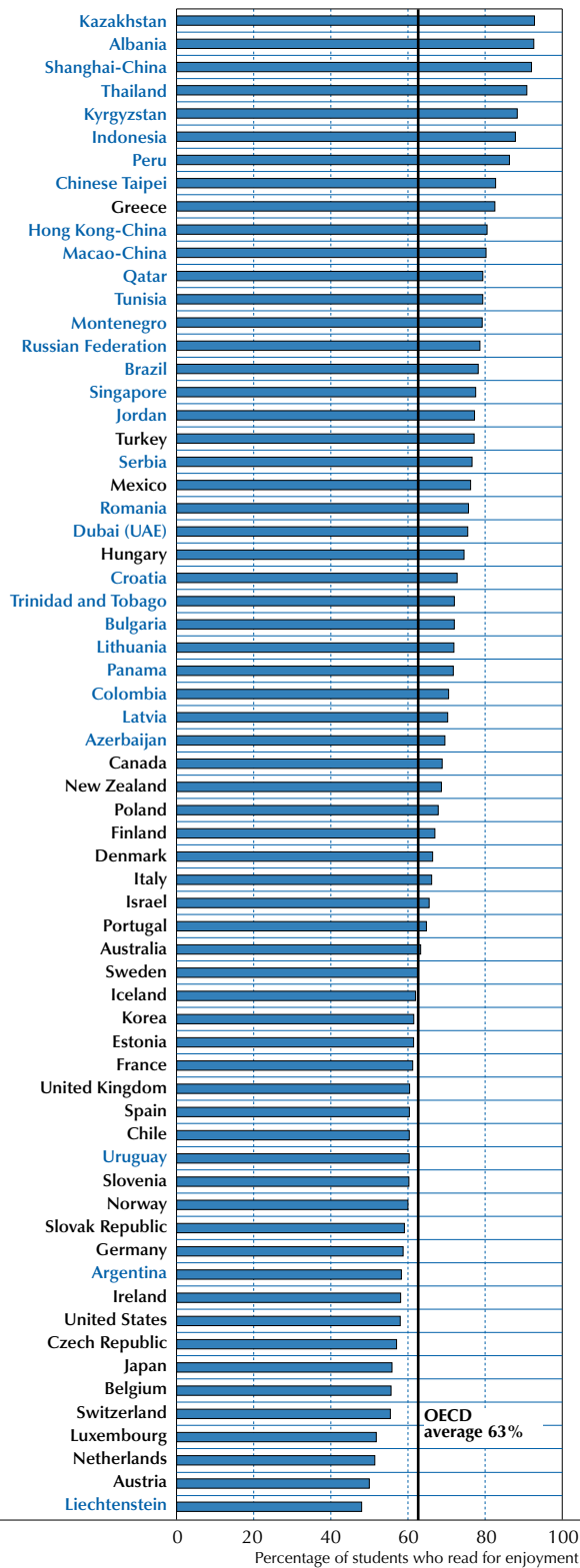
Cross-country differences in whether, and for how long, students reported reading for enjoyment may be due to differences in the extent to which various traditions and cultures value reading, in the opportunities students have to read outside of school, the extent to which students find reading an enjoyable activity and the materials students can access in their free time. Given the fact that reading habits are self-reported by participating students, such differences could also stem partly from how much students in different countries over- or under-report their reading habits (Box III.1.3 for a detailed description of difficulties in interpreting cross-country differences in self-reported reading habits).<sup>1</sup>

On average across OECD countries, 37% of students reported that they did not read for enjoyment; in Austria and the partner country Liechtenstein, more than half of the 15-year-olds reported not reading for enjoyment at all. In contrast, more than 90% of students in the partner countries and economy Kazakhstan, Albania, Shanghai-China and Thailand said that they read for enjoyment (Figure III.2.3). Another 30% of students across the OECD area reported reading for 30 minutes or less per day, 17% read for more than 30 minutes but less than one hour per day, 11% read for between one and two hours per day, and fewer than 5% read for more than two hours daily (Table III.1.3). Greece is the only OECD country where more than 10% of students read for enjoyment for longer than two hours on a daily basis.

Girls read more for enjoyment than boys in all countries and economies, except for Korea. Figure III.2.4 (Table III.1.4) shows that the frequency of reading for enjoyment is 21 percentage points higher for girls than for boys, on average across the OECD countries. In Italy, Canada, the Czech Republic, Finland, Germany, Portugal, Slovenia, Poland, Estonia, the Netherlands and the partner countries Uruguay, Latvia and Lithuania, the difference in the number of girls and boys who read for enjoyment is 25 percentage points or larger. In Korea, boys and girls are equally likely to read for enjoyment, and gender differences in reading for enjoyment are also relatively small in Japan and the partner countries and economies Kazakhstan, Azerbaijan, Peru, Shanghai-China, Jordan, Kyrgyzstan, Hong Kong-China, Indonesia, Albania and Thailand. The gender gap in whether boys and girls read for enjoyment is widening: as Figure III.2.5 shows, between 2000 and 2009, both boys and girls lost interest in reading, but the decrease in the number of boys reading for enjoyment was greater than that in the number of girls (Chapter 5 in Volume V, *Learning Trends: Changes in Student Performance since 2000*, for a detailed description of changes in reading habits between 2000 and 2009).


■ Figure III.2.3 ■

## Percentage of students who read for enjoyment



Countries are ranked in descending order of the percentage of students who read for enjoyment.

Source: OECD, PISA 2009 Database, Table III.1.4.

StatLink  <http://dx.doi.org/10.1787/888932360195>



■ Figure III.2.4 ■  
**Percentage of boys and girls who read for enjoyment**

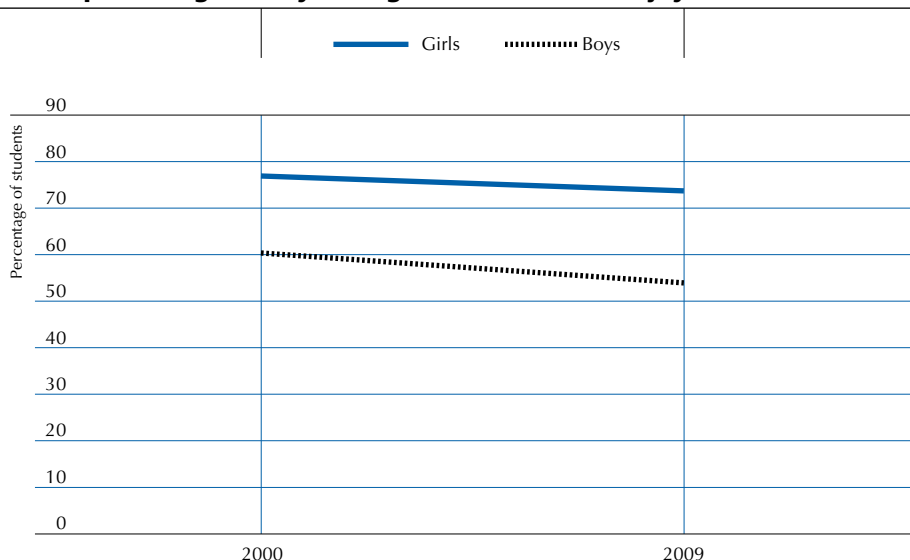


Countries are ranked in ascending order of the difference of boys and girls who read for enjoyment.

Source: OECD, PISA 2009 Database, Table III.1.4.


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■ Figure III.2.5 ■

**Change in the percentage of boys and girls who read for enjoyment between 2000 and 2009**

Note: OECD average for 26 countries in 2000 and 2009.

Source: OECD, *PISA 2009 Database*, Table V.5.1.

StatLink  <http://dx.doi.org/10.1787/888932360195>

On average across OECD countries, 72% of socio-economically advantaged students – students in the top quarter of the *PISA index of economic, social and cultural status* in the country of assessment – reported reading for enjoyment daily while only 56% of disadvantaged students reported doing the same. In general, the difference in whether socio-economically advantaged and disadvantaged students read for enjoyment is greater among OECD countries than among partner countries and economies. In eleven OECD countries – Ireland, Germany, France, Belgium, Luxembourg, Australia, Switzerland, Korea, Estonia, Austria and Luxembourg – the difference in the share of socio-economically advantaged and disadvantaged students who read for enjoyment is more than 20 percentage points (Table III.1.5).

Figures III.2.7, III.2.8 and III.2.9 relate country-level differences in the share of students who reported reading for enjoyment to the activities in which students engage both in and outside school. Differences in what students do while at school, in the length of the school day, homework requirements and other out-of-school activities may, in fact, limit students' opportunities to read for enjoyment.

PISA 2009 does not contain sufficient information to map countries and economies precisely on the basis of how much time students spend in school, doing homework and in different out-of-school activities. Figures III.2.7, III.2.8 and III.2.9, however, show that countries and economies in which large numbers of students do not read for enjoyment are not necessarily those where students spend more time in regular school lessons on the language of instruction, science and mathematics; but that participation in remedial and enrichment courses may at least partially crowd-out students' reading for enjoyment. When students engage in remedial and enrichment courses, reading for enjoyment may be one of the entertainment activities that students are willing to forgo (Volume IV, *What Makes a School Successful?*, for a detailed description of between- and within-country variations in the time students spend in regular lessons at school and in after-school lessons).

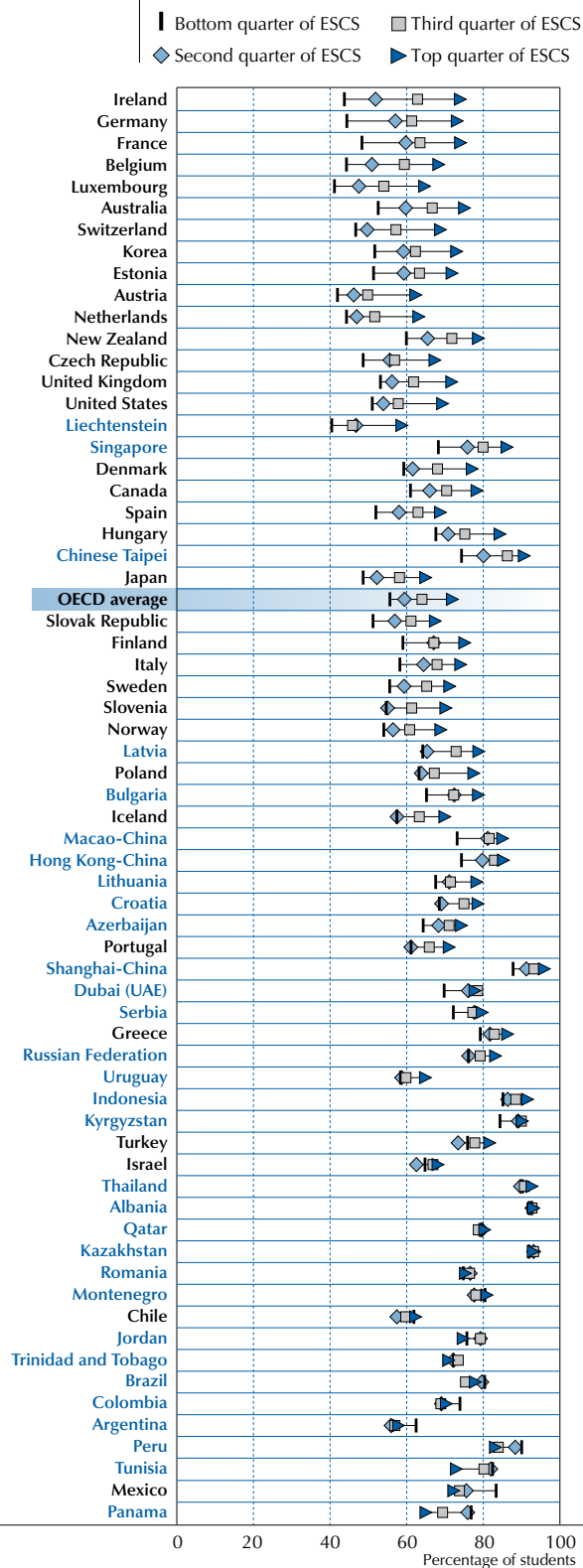
In general, countries and economies where large numbers of students reported participating in literature courses and in school activities that are aimed at interpreting literary texts are also those where large numbers of students reported reading for enjoyment in PISA 2009. Figure III.2.10 and Figure III.2.11 indicate that school activities do not dampen, but rather foster students' interest in reading and motivation to read in their free time.





■ Figure III.2.6 ■

### Percentage of students who read for enjoyment, by socio-economic background



Note: ESCS refers to the PISA index of economics, social and cultural status.

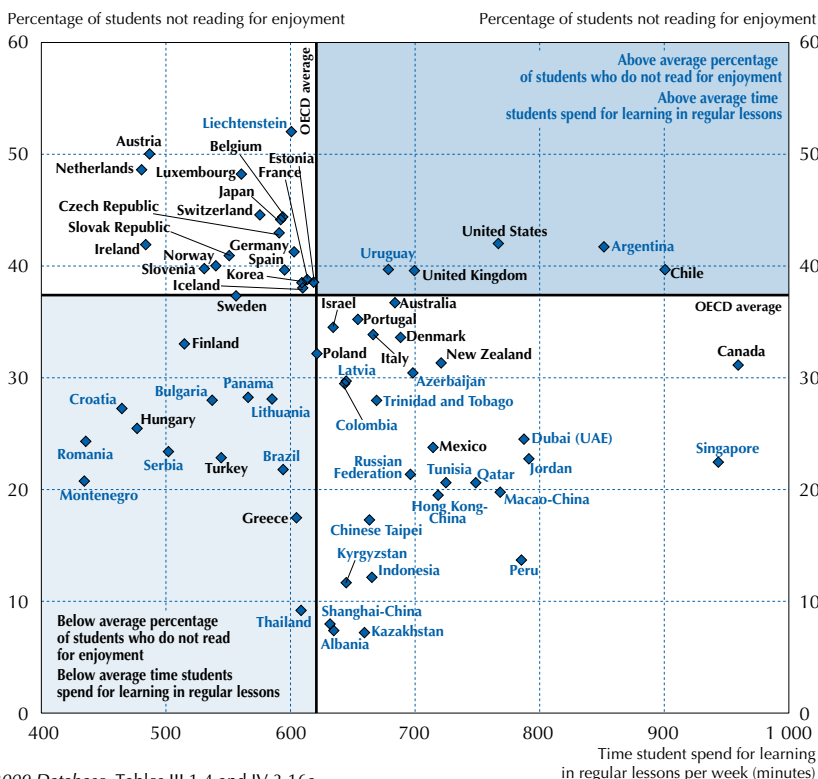
Countries are ranked in descending order of the difference between the percentage of students who read for enjoyment in the top and bottom quarter of ESCS.

Source: OECD, PISA 2009 Database, Table III.1.5.

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Figure III.2.7

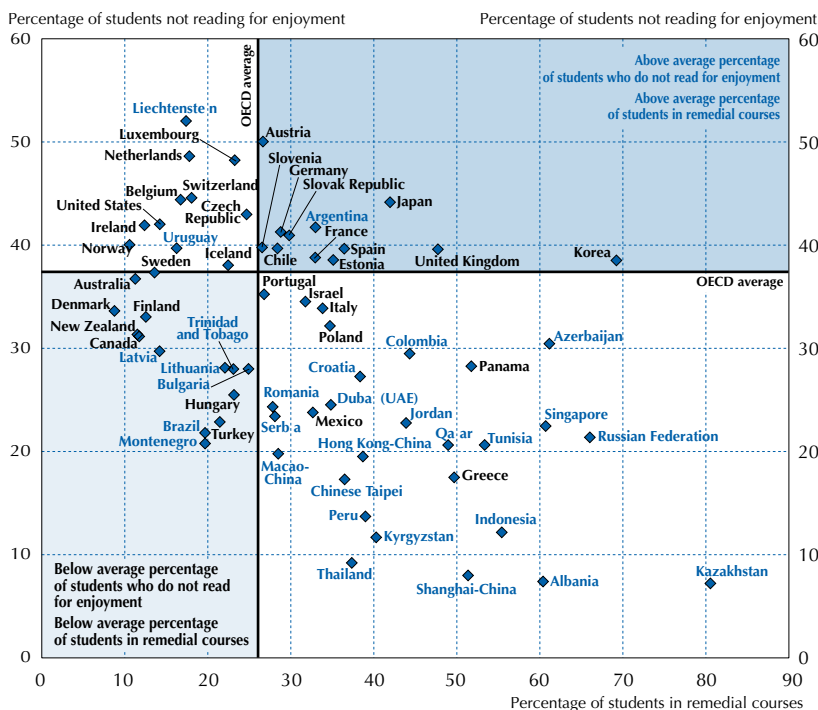
Does time spent in regular lessons at school crowd-out reading for enjoyment?



Source: OECD, PISA 2009 Database, Tables III.1.4 and IV.3.16a.  
StatLink <http://dx.doi.org/10.1787/888932360195>

Figure III.2.8

Does participation in remedial lessons crowd-out reading for enjoyment?

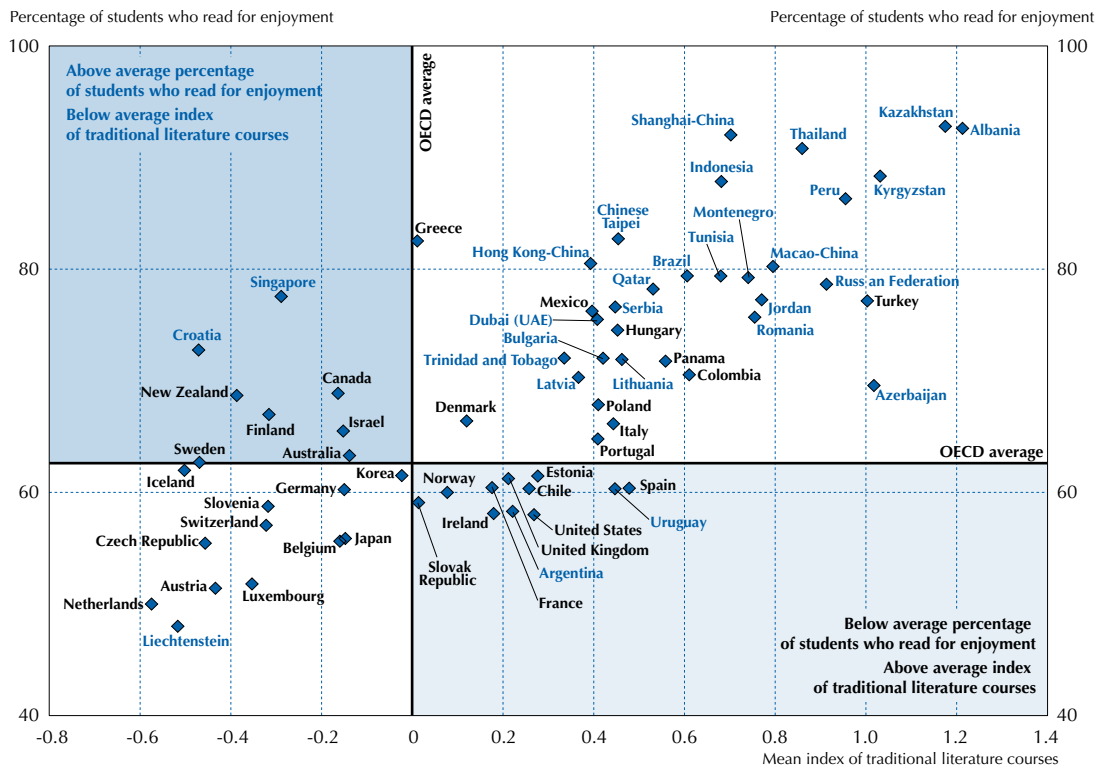


Source: OECD, PISA 2009 Database, Tables III.1.4 and IV.3.17a.  
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■ Figure III.2.11 ■

## Do education systems which value traditional literature courses have a larger number of students who read for enjoyment?



Source: OECD, *PISA 2009 Database*, Tables III.1.4 and III.2.5.  
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## What do students read for enjoyment?

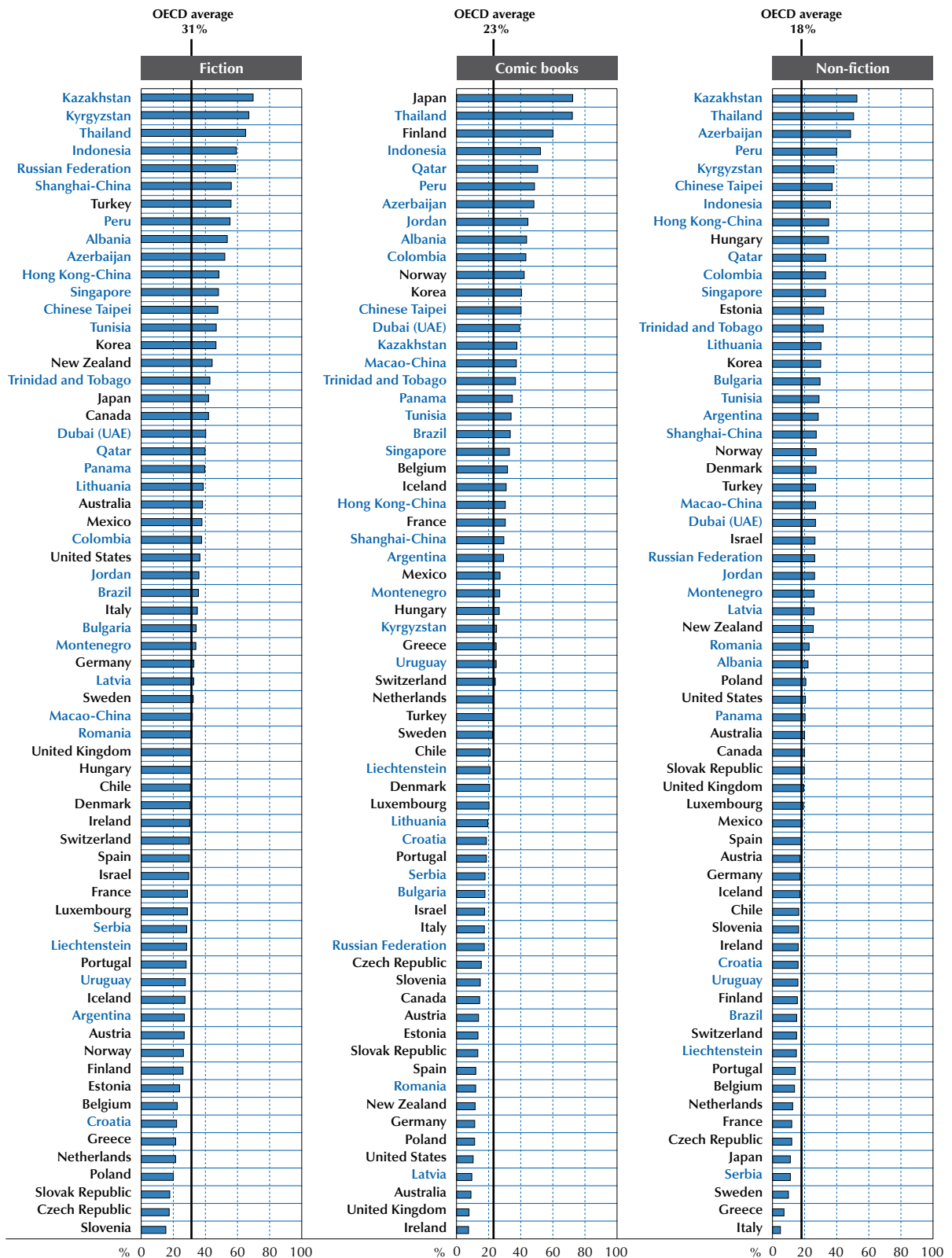
### Printed materials

Figure III.2.12 illustrates the share of students in OECD countries who reported reading regularly, either “several times a month” or “several times a week”, and for their enjoyment, magazines, comic books, fiction (novels, narratives and stories), non-fiction or newspapers. On average across OECD countries, more than six in ten students reported reading magazines and newspapers regularly. About three in ten students, however, reported reading fiction regularly in OECD countries, while only about two in ten read comic books or non-fiction regularly (Table III.2.7).

Students in different countries reported similar tastes in what they liked to read. Magazines and newspapers were the materials students reported reading the most in almost all countries, while comic books and fiction were the materials that students reported they were least likely to read regularly in almost all countries (Figure III.2.12). Notable exceptions are found in two OECD countries. While students in Japan and, to a lesser extent, students in Finland, reported reading magazines and newspapers in line with students in the other OECD countries, these students were marginally less likely than students in the other OECD countries to read non-fiction, were more likely to read fiction and were especially likely to read comic books. The shares of students who reported reading magazines, fiction and non-fiction books regularly was in line with the average, but very few students in the United States reported reading newspapers and comic books regularly. Large shares of students in Korea reported reading fiction either several times a month or several times a week, while comparatively few of them read magazines regularly.



■ Figure III.2.12 [Part 1/2] ■  
**What students read for enjoyment**

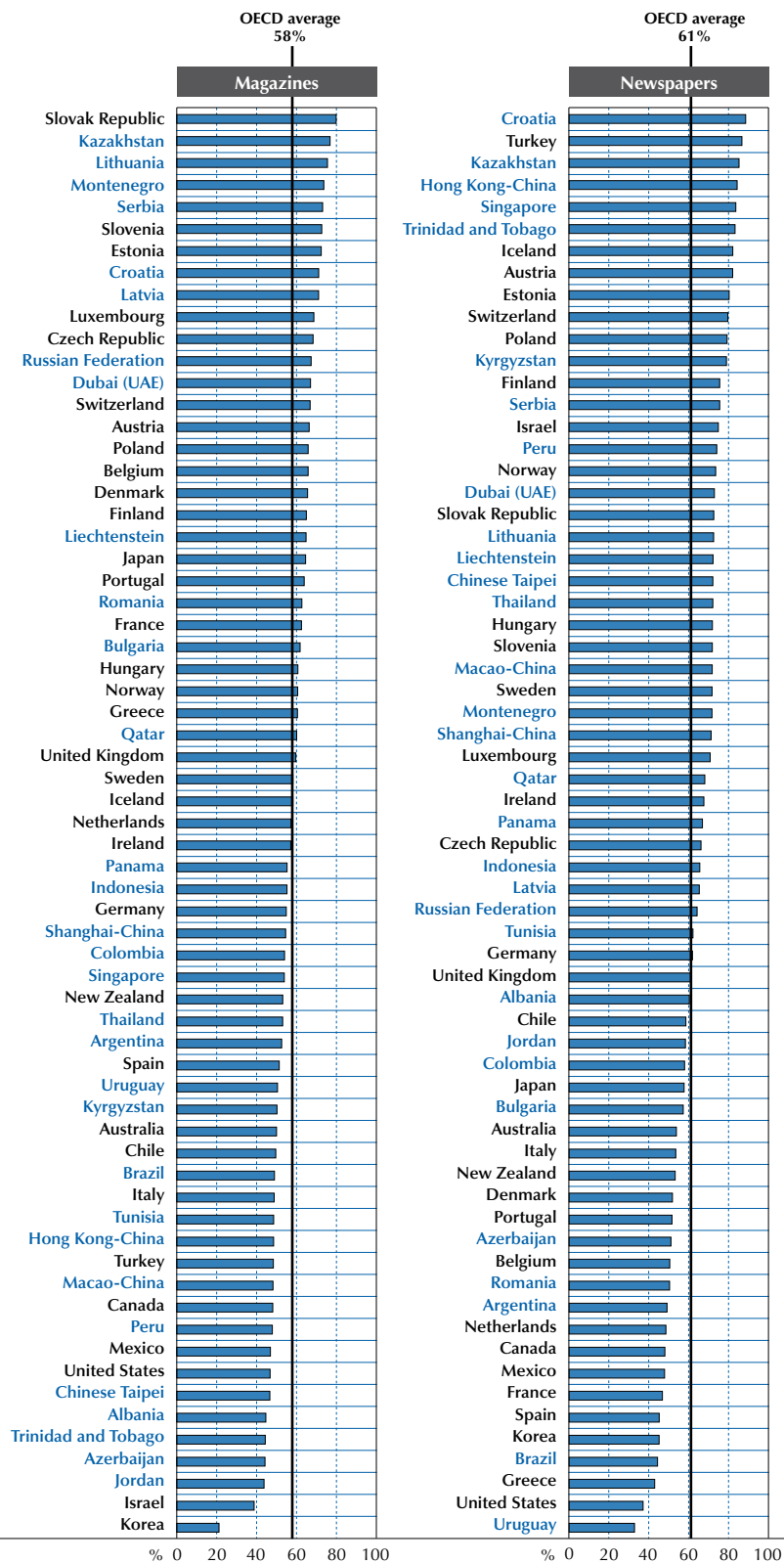


Countries are ranked in descending order of the percentage of students on the items of the index of diversity of reading materials.

Source: OECD, PISA 2009 Database, Table III.2.7.


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■ Figure III.2.12 [Part 2/2] ■  
**What students read for enjoyment**



Countries are ranked in descending order of the percentage of students on the items of the index of diversity of reading materials.

Source: OECD, PISA 2009 Database, Table III.2.7.

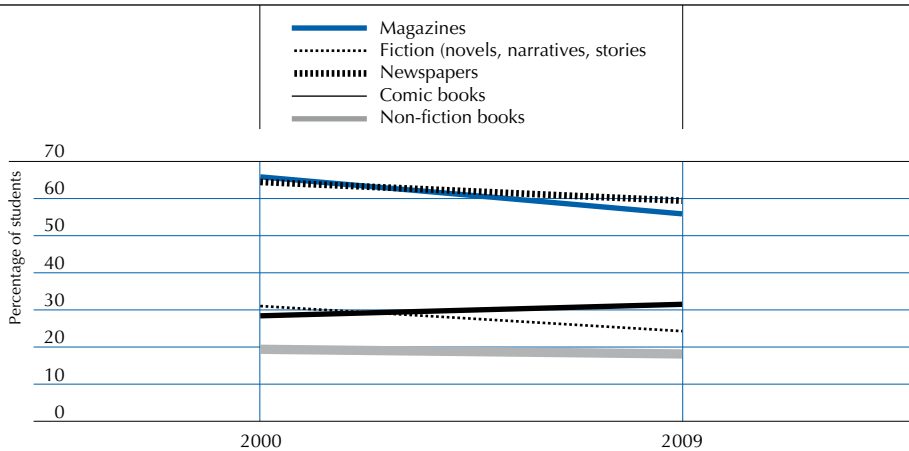
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Although magazines and newspapers are the most common material students read for enjoyment, results presented in Volume V, *Learning Trends*, suggest that, on average across OECD countries, the share of students who read magazines and newspapers either several times a month or several times a week has declined sharply. Figure III.2.13 shows that, across the OECD countries that participated in both PISA 2000 and PISA 2009, the number of students reading newspapers has decreased by five percentage points, the number of students reading magazines has decreased by ten percentage points, while the number of students who reported reading fiction regularly has increased by three percentage points (Volume V, Chapter 5 for a detailed description of trends in reading patterns).


■ Figure III.2.13 ■

### Change in what students read for enjoyment between 2000 and 2009, OECD average



Note: OECD average for 26 countries in 2000 and 2009.

Source: OECD, *PISA 2009 Database*, Table V.5.6.

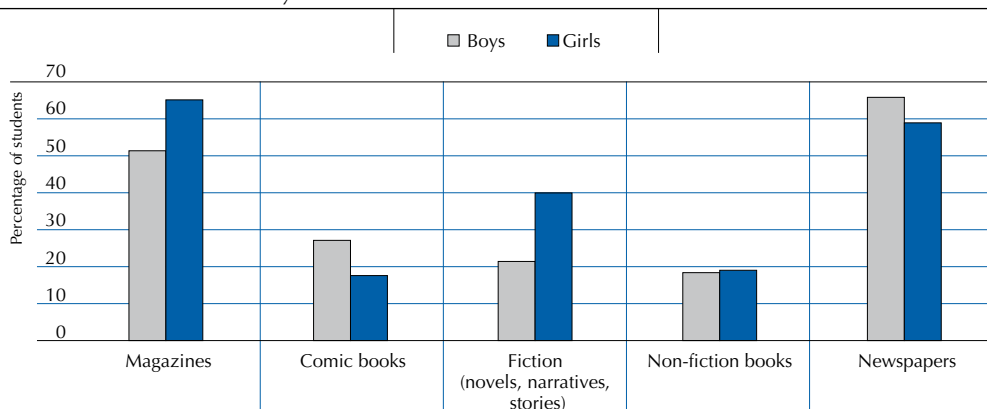
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Boys are not only less likely than girls to report reading for enjoyment in almost all countries – with the exception of Korea (Figure III.2.14 and Table III.1.4), they also have different reading patterns. On average across OECD countries, 66% of boys read newspapers for enjoyment regularly, while only 59% of girls do so. Although reading comic books regularly is much less common, on average in OECD countries, boys are 33% more likely than girls to read comic books several times a month or several times a week (27% for boys and 18% for girls). On the other hand, girls are more likely than boys to be frequent readers of fiction in every participating country (Figure III.2.14 and Table III.2.8), and in almost all countries, girls are more likely than boys to read magazines (65% for girls and 51% for boys).

■ Figure III. 2.14 ■

### What boys and girls read for enjoyment, OECD average

*Percentage of boys and girls who reported that they read the following materials because they want to “several times a month” or “several times a week”*



Source: OECD, *PISA 2009 Database*, Table III.2.8.


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Table III.1.10 shows the extent to which students in different participating countries can be considered to be diversified readers, that is, whether they read a wide variety of reading materials for their own enjoyment. The *index of diversity of reading materials*, set to have a mean of 0 and a standard deviation of 1 across OECD countries, suggests that within OECD countries, students in Turkey, Finland, Japan, Norway, Estonia and Hungary tend to read a variety of materials, while students in Greece, the Netherlands and the United States are more likely to favour particular materials over others when reading for enjoyment.

### On line reading activities

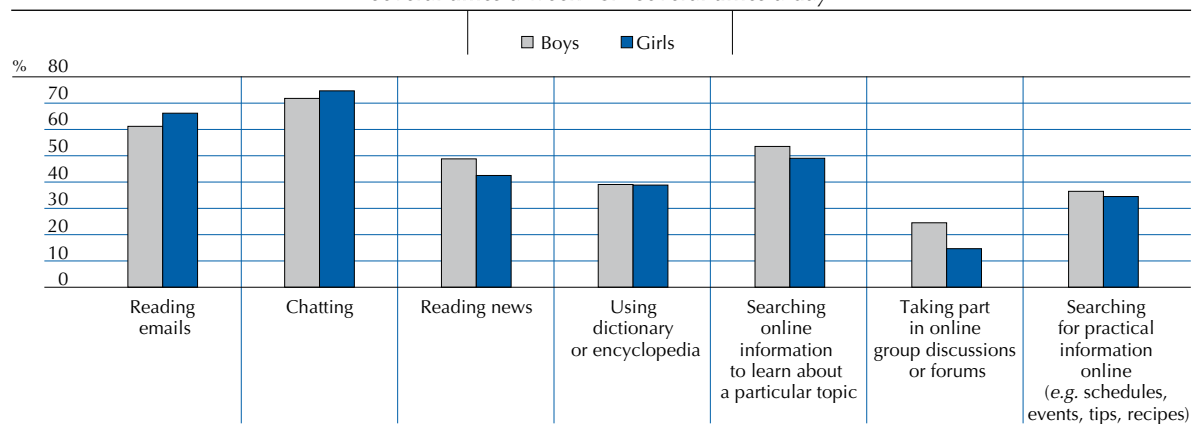
On average across OECD countries, the most common type of online reading activity reported by students is chatting on line, with almost three-quarters of students reporting that they engaged in this activity at least several times a week. This is followed by reading e-mails (64%) and searching online information (51%). In virtually all countries, chatting online is the most common form of online reading activity, and where it is not – such as in Korea, Mexico and Turkey – searching for online information is the most common. Japan is a notable exception: in Japan, reading e-mails is by far the most frequent form of online reading activity (Table III.2.9).

Results presented in Table III.2.10 suggest that in most countries, boys and girls do not differ, or differ only marginally, in how much they use the Internet for reading for enjoyment. However, boys and girls appear to use the Internet for different purposes: Figure III.2.15 and Table III.2.10 show that girls are more likely than boys to use the Internet to communicate, while boys are more likely than girls to surf the Internet for information and to read the news.

■ Figure III.2.15 ■

### What boys and girls read on line, OECD average

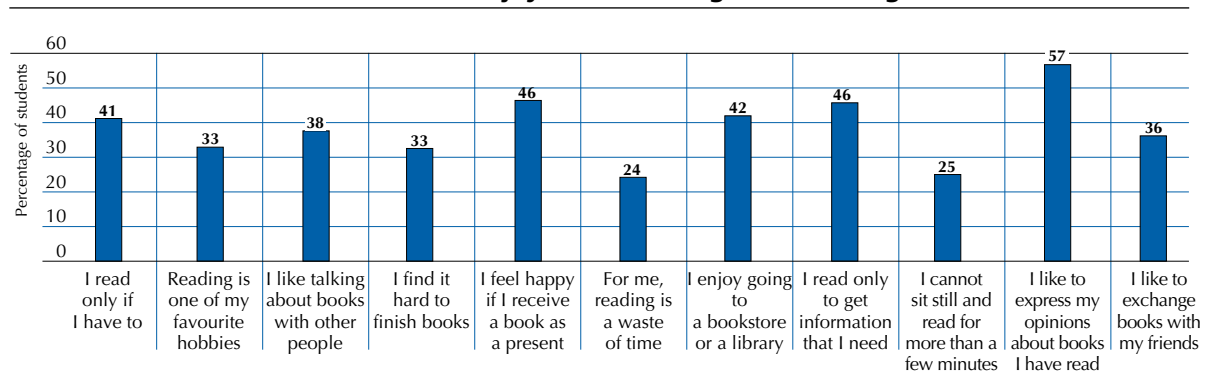
Percentage of boys and girls who reported that they were involved in the following online reading activities “several times a week” or “several times a day”



Source: OECD, *PISA 2009 Database*, Table III.2.10.  
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■ Figure III.2.16 ■

### What students enjoy about reading, OECD average

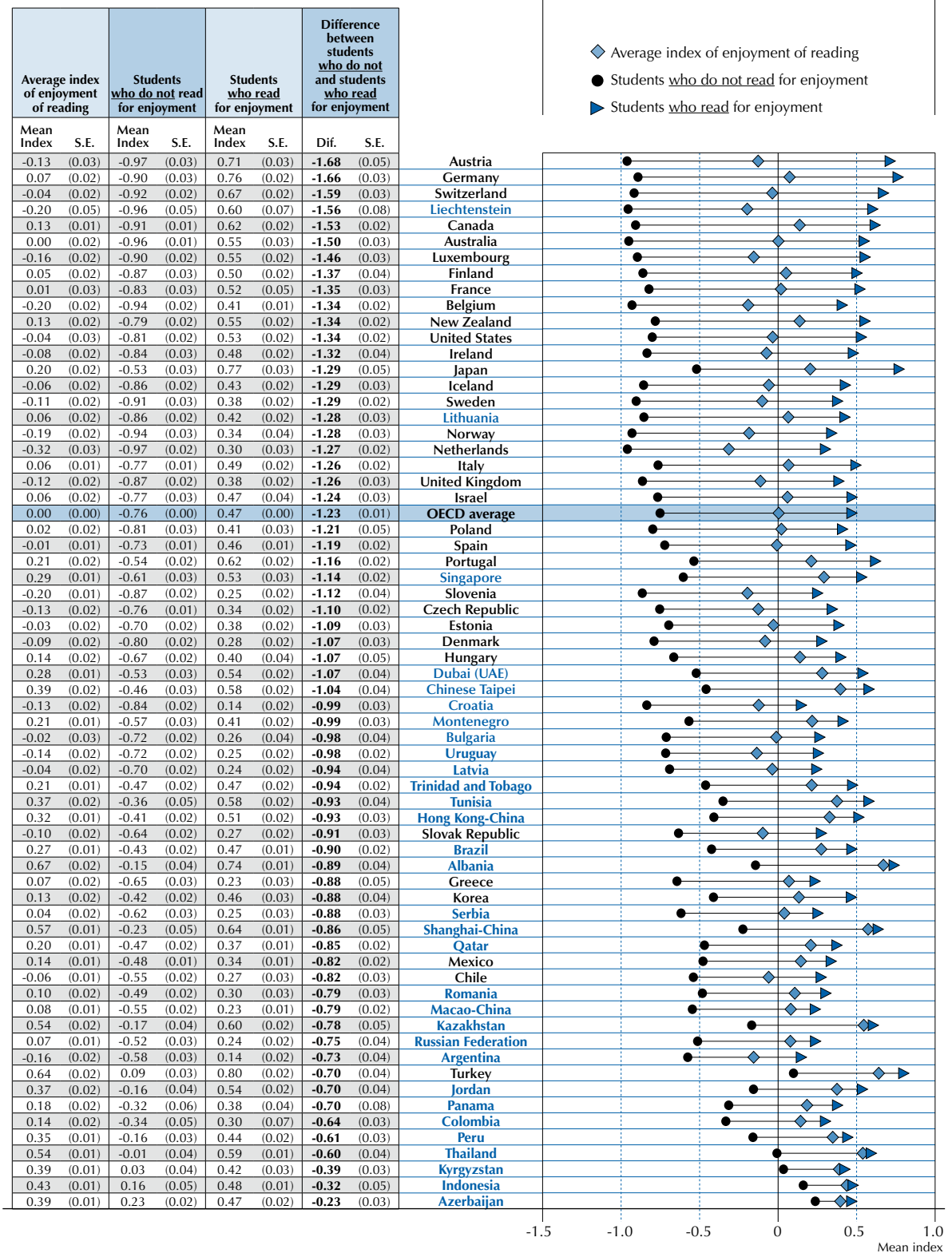


Source: OECD, *PISA 2009 Database*, Table III.2.11.  
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■ Figure III.2.17 ■

## To what extent do students who read for enjoyment enjoy reading



Note: All mean index differences between students who do not and students who read for enjoyment are statistically significant. Countries are ranked in descending order of the mean index differences between students who do not and students who read for enjoyment.

Source: OECD, PISA 2009 Database.

StatLink <http://dx.doi.org/10.1787/888932360195>

## How much do students enjoy reading?

Being interested in and enjoying particular subjects, or being intrinsically motivated, can affect both the degree and the continuity shown by a student's engagement in learning and the depth of understanding achieved. Research has shown this effect to operate largely independently of students' general motivation to learn. For example, a student who is interested in reading may or may not show a high level of general learning motivation and vice versa. Hence, an analysis of the pattern of students' interest in reading is important because it may reveal strengths and weaknesses in the attempts made by education systems to promote a greater desire to read among different sub-groups of students.

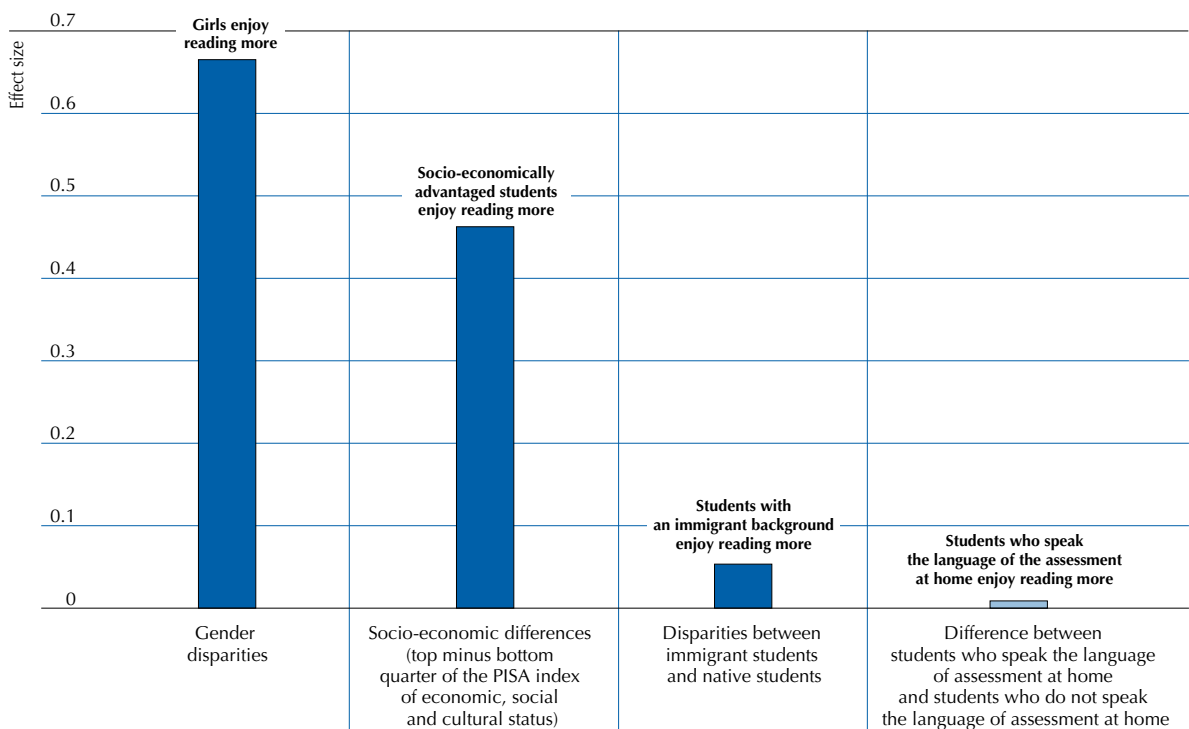
On average across OECD countries, relatively large proportions of students reported negative attitudes towards reading beyond the essential. For instance, 46% of students agreed or strongly agreed that they read only to obtain the information they need, 41% reported that they read only if they have to, 24% reported that reading is a waste of time and only one-third of students agreed or strongly agreed that reading was one of their favourite hobbies (Table III.2.11).

Figure III.2.3 and Table III.1.3 show how countries vary with respect to how many of their students read for enjoyment and how much time they spend doing so. Students who do not read for enjoyment are those who generally do not enjoy reading. Figure III.2.17 shows that students who do not read for enjoyment are less likely to enjoy reading – as indicated by their values on a composite *index of enjoyment of reading*<sup>2</sup> than students who read for enjoyment.

Figure III.2.18 and Table III.1.1 illustrate how girls enjoy reading more than boys in all the countries that participated in PISA. In 37 countries, the difference in the average value of the *index of enjoyment of reading* of girls and boys is greater than half a standard deviation. Girls enjoy reading more than boys the most in Finland, Germany, Canada, Austria, Switzerland and the partner country Lithuania, where gender differences in the *index of enjoyment of reading* are greater than 0.8 of a standard deviation.

■ Figure III.2.18 ■

### Disparities in enjoyment of reading, OECD average



Note: Effect sizes that are statistically significant are marked in a darker tone.

Source: OECD, *PISA 2009 Database*, Tables III.2.12, III.2.13, III.2.14 and III.2.15.

StatLink <http://dx.doi.org/10.1787/888932360195>



Table III.2.16 illustrates that in most countries, differences in average levels of enjoyment of reading between socio-economically advantaged and disadvantaged students<sup>3</sup> are not as large as gender differences: only in Australia, Belgium, Denmark, France, Ireland, Japan, Korea, the United Kingdom and the partner country and economies Shanghai-China, Singapore and Chinese Taipei, is the difference in average levels of enjoyment of reading between socio-economically advantaged and disadvantaged students greater than the difference in the level of enjoyment of reading between boys and girls. Differences between students without an immigrant background and students with an immigrant background are generally small, as are differences between students who speak the same language at home as the language in which the PISA assessment was conducted and those who do not (Tables III.2.14 and III.2.15).

## APPROACHES TO LEARNING

Students do not passively receive and process information; they are active participants in the learning process, constructing meaning in ways shaped by their own prior knowledge and experiences as well as by features of the text (Goldman & Rakestraw, 2000; Kintsch, 2004). Students with a well-developed ability to manage their own learning can choose appropriate learning goals, use their existing knowledge and skills to direct their learning, and select learning strategies appropriate to the task at hand (Zimmerman & Clearly, 2009). These skills are increasingly not only recognised as important determining factors of academic achievement, but as necessary for lifelong learning (Boekaerts, 2009; Ryan & Deci, 2009).

An effective learner not only practices assiduously and enjoys practicing, but also processes information efficiently (Hacker, 2004). This requires, in part, the ability to relate new material to existing knowledge and to determine how knowledge can be applied in the real world. A good understanding of which strategies are effective in promoting learning strengthens students' capacity to organise their own learning and to be ready for lifelong learning. Good learners can apply an arsenal of learning strategies in a flexible manner. Students who have problems learning on their own often have no access to strategies to help them learn, or they fail to select a strategy that is appropriate to the task at hand.

### Awareness of effective strategies to understand and remember information

PISA 2009 asked students to report the extent to which they are aware that doing things like "after reading the text, I discuss its content with other people", "I underline important parts of the text" and "I summarise the text in my own words" are effective strategies to understand and remember information, while doing things like "I concentrate on the parts of the text that are easy to understand", "I quickly read through the text twice" and "I read the text aloud to another person" are less effective strategies.<sup>4</sup>

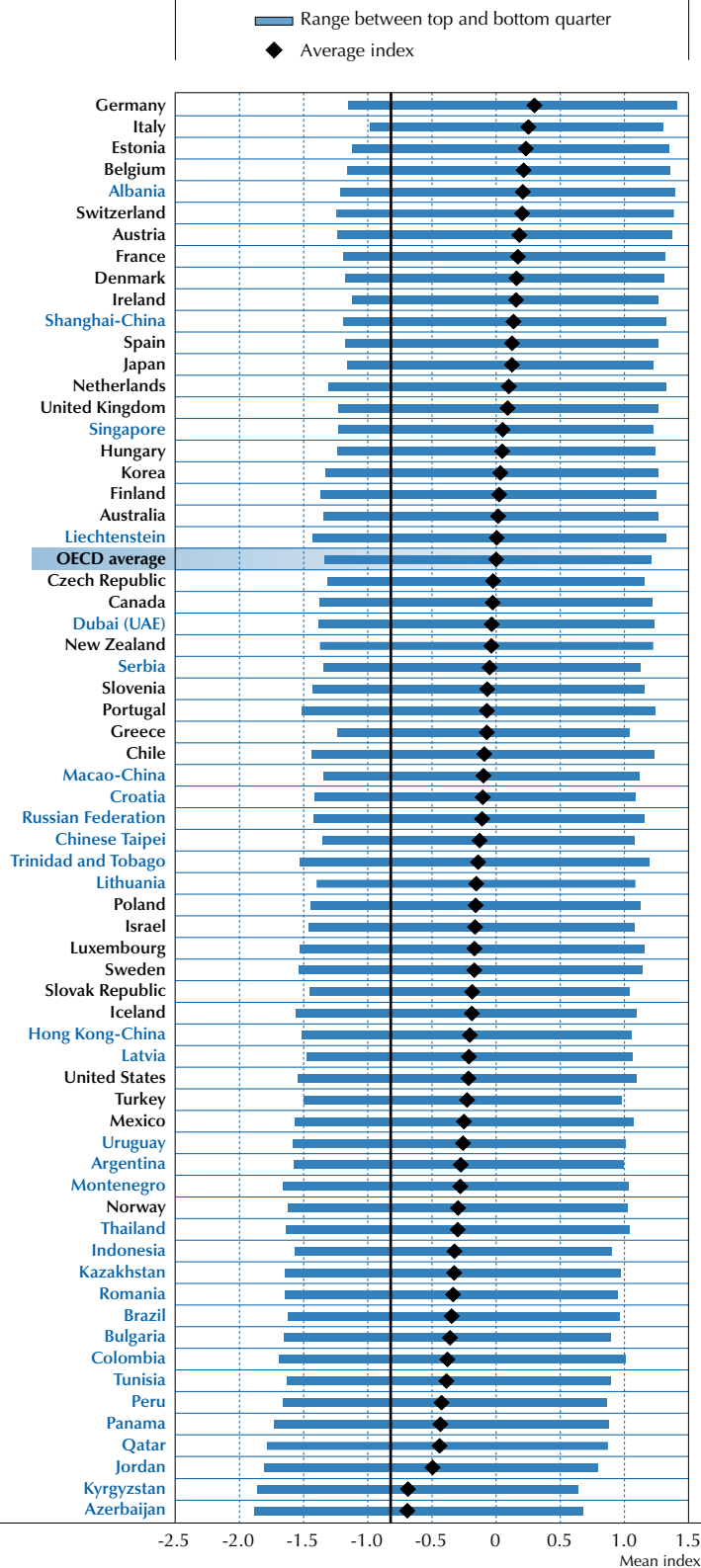
Figure III.2.19 shows how countries differ in the extent to which their students are aware of effective strategies to understand and summarise information. For each country, it shows the country-level mean index value – *index of understanding and remembering* is standardised to have a mean of 0 and standard deviation of 1 across the OECD countries – and the difference in the average index value for the students who know the most and least about these strategies. Among OECD countries, students are most knowledgeable about effective strategies to understand and remember information in Germany, Italy, Estonia, Belgium and Switzerland, while students are least knowledgeable about these strategies in Norway, Mexico, Turkey and the United States (Table III.1.14).

Greece, Italy, Japan and Ireland are the OECD countries where the difference between students who are the most knowledgeable about effective strategies to understand and remember information (the top quarter of the *index of understanding and remembering*) and the least knowledgeable students (the bottom quarter of the *index of understanding and remembering*) is smallest, while Portugal, Luxembourg, Sweden, Chile and Iceland are the OECD countries where the difference between the top and the bottom quarters is largest (Figure III.2.19).

On average, girls have greater levels of awareness of effective strategies to understand and remember information than boys. The difference in the average index value between boys and girls in the OECD area is 0.27 and it is higher than 0.4 in Finland, Iceland and the partner country Liechtenstein. There are no gender differences in the partner countries Panama, Azerbaijan, Peru and Colombia, and gender differences are smaller than 0.1 in Mexico and the partner countries Argentina, Tunisia, Singapore and Qatar (Table III.1.14). On average across OECD countries, socio-economically advantaged students have a greater awareness of effective strategies to understand and remember information than disadvantaged students (Table III.2.13). Socio-economic differences in awareness of effective strategies to understand and remember information are smallest in Greece and the partner countries and economies Azerbaijan, Tunisia, Hong Kong-China, Shanghai-China and Macao-China. These differences are more than half a standard deviation in Switzerland, Belgium, Germany, Austria, Chile, Denmark, Australia and the partner countries Uruguay, Colombia, Kyrgyzstan, Bulgaria, Panama and Liechtenstein.

Figure III.2.19

### To what extent are students aware of effective strategies to understand and remember information?



Countries are ranked in descending order of the average index of understanding and remembering.

Source: OECD, PISA 2009 Database, Table III.1.14.

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In five countries, students with an immigrant background have greater levels of awareness of effective strategies to understand and remember information, on average, than students without an immigrant background. In the partner country and economy Dubai (UAE) and Kyrgyzstan, the average level of awareness of these strategies among students with an immigrant background is almost half a standard deviation higher than among students without such a background. In 18 countries, students without an immigrant background have higher levels of awareness of effective strategies to understand and remember information than students with an immigrant background.

### **Awareness of effective strategies to summarise information**

PISA 2009 assessed the extent to which students were aware of effective learning strategies. For example, did students know that when they agreed with the statements “I carefully check whether the most important facts in the text are represented in the summary” and “I read through the text, underlining the most important sentences. Then I write them in my own words as a summary” that they recognised that these are the most effective strategies? Did they know that when they agreed with the statements “I write a summary. Then I check that each paragraph is covered in the summary, because the content of each paragraph should be included” and “before writing the summary, I read the text as many times as possible” that these were moderately effective strategies? And when they reported that “I try to copy out accurately as many sentences as possible”, did they know that this was the least effective way to summarise information?<sup>5</sup>

Students in Italy and France are particularly knowledgeable about effective strategies to summarise information while, among OECD countries, students in Turkey, Slovenia, the United States and Iceland are the least knowledgeable. Figure III.2.20 indicates that the difference between the least knowledgeable students – those in the bottom quarter of the *index of summarising* – and the most knowledgeable students – those in the top quarter of the *index of summarising* – is smallest in Italy and Spain (Figure III.2.20 and Table III.1.16) and largest in Sweden and the partner country and economy Hong Kong-China and Qatar.

The difference in the average level of awareness of effective strategies to summarise information between boys and girls corresponds to 0.4 of a standard deviation or more in 14 countries and it is greatest in Finland, Iceland and the partner country Liechtenstein, where it is greater than half a standard deviation (Table III.1.16). Socio-economic differences in awareness of these strategies are relatively large: the difference between socio-economically advantaged and disadvantaged students in awareness of these strategies is half a standard deviation or more in 10 OECD countries and in 8 partner countries and economies, and it is above 0.6 in Belgium, Hungary and the partner countries Uruguay and Peru (Table III.2.16). In 21 countries, students without an immigrant background show greater levels of awareness of effective summarising strategies, while in Australia and the partner economy Dubai (UAE), students with an immigrant background show greater levels of awareness. In 31 countries, students who speak the language of assessment at home show higher levels of awareness of these strategies than students who do not, while the opposite is true in six countries.

On average across OECD countries, those where students know which strategies are effective for understanding and remembering information are also countries where students know which strategies are useful for summarising information (the correlation between the two indicators is 0.69 across OECD countries). For example, in Ireland, Denmark, Switzerland, Belgium, France, Germany and Italy, students generally have high levels of awareness about effective strategies to understand, remember and summarise information. In contrast, students in Iceland, the United States and Turkey have relatively low levels of awareness about these strategies.

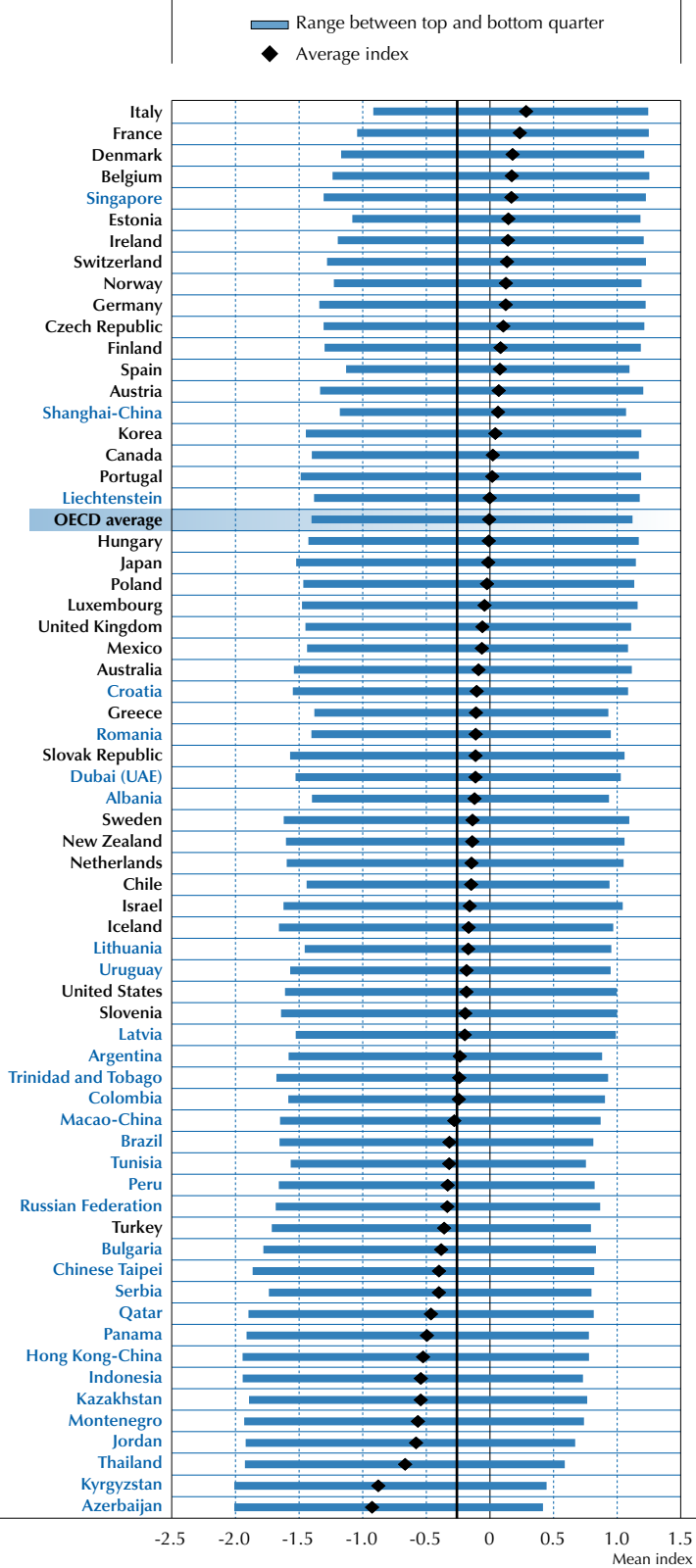
### **Use of memorisation, elaboration and control strategies**

PISA 2009 assessed both students’ self-reported use of memorisation strategies and students’ self-reported awareness of which strategies are most effective for remembering information. While the two indices appear to be closely linked, in fact they measure very different ways in which students store information. The *index of understanding and remembering* clarifies the extent to which students can store information, integrate it into a prior knowledge base and elaborate on it so that it can be applied to novel situations. The *index of memorisation strategies* examines how often students use memorisation techniques in which new information is stored in the memory with little or no further processing.<sup>6</sup>

PISA 2009 asked students to report whether they use memorisation, elaboration and control strategies “almost never”, “sometimes”, “often” or “almost always”. On the basis of their responses, three indices were created. As shown in Figure III.1.15, the *index of memorisation strategies* measures the extent to which students try to memorise new material in order to be able to recite it, and how far they practise by reading the material over and over again.


Figure III.2.20

## To what extent are students aware of effective strategies to summarise information?



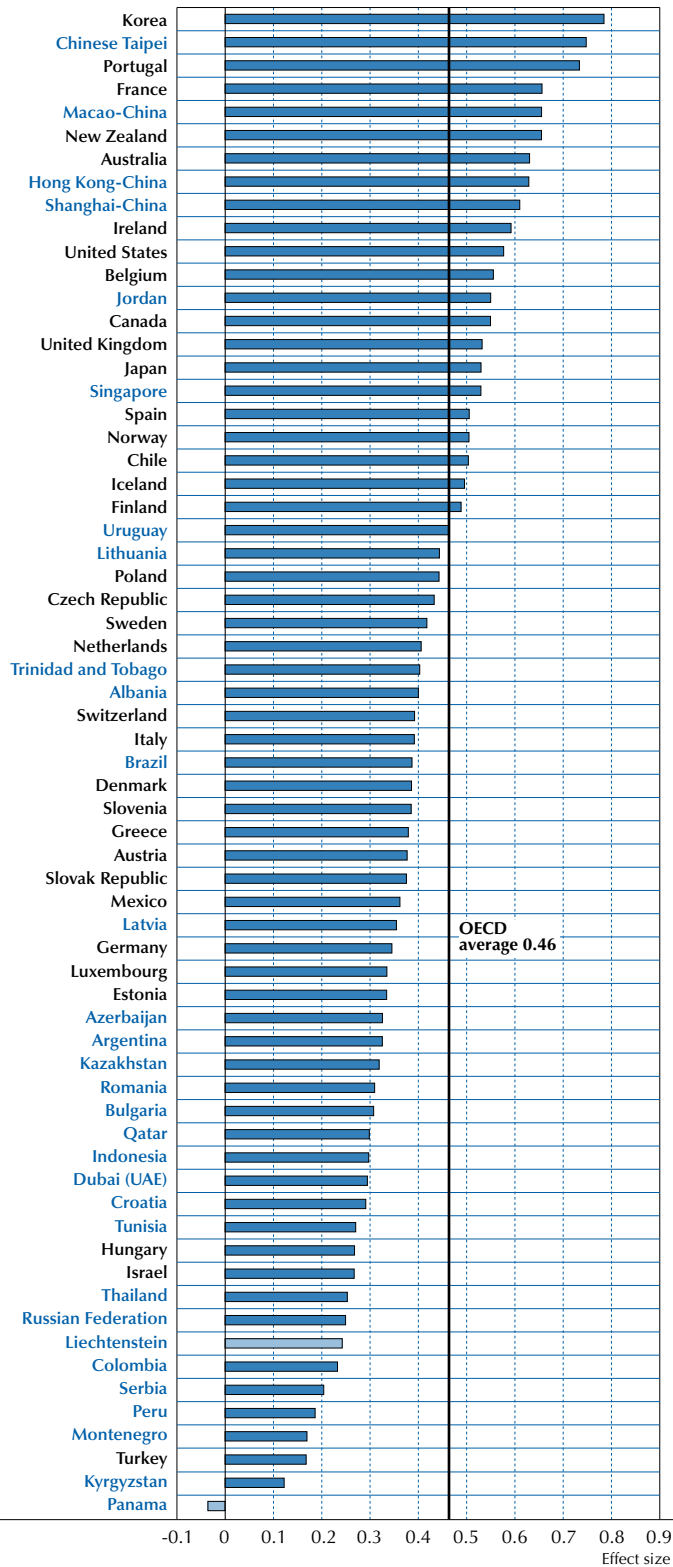
Countries are ranked in descending order of the average index of summarising.

Source: OECD, PISA 2009 Database, Table III.1.16.

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■ Figure III.2.21 ■  
**Socio-economic disparities in the use of control strategies**



Note: Effect sizes that are statistically significant are marked in a darker tone.

Countries are ranked in descending order of the effect of socio-economic background on the use of control strategies.

Source: OECD, PISA 2009 Database, Table III.2.13.

StatLink <http://dx.doi.org/10.1787/888932360195>



The *index of elaboration strategies* measures whether students try to understand the material better by relating it to things they already know, whether they try to relate new material to things learned in other subjects, or whether they try to determine how the information might be useful in the real world. The *index of control strategies* defines control strategies as the plans students say they use to ensure that they reach their learning goals. These involve determining what they have already learned and working out what they still need to learn. The *index of control strategies* measures whether students know which concepts they have not understood from their reading, whether they check to be certain that they remember the most important points from the text they have read, and whether they look for additional information to clarify what they do not understand.

Girls generally reported making greater use of both memorisation and especially control strategies than boys (Table III.2.12). On the other hand, boys tended to report making greater use of elaboration strategies, although gender differences are generally small (effect size below 0.2), and in as many as eight OECD countries and 12 partner countries and economies, girls are just as likely as boys to use elaboration strategies. While boys and girls tended to report similar levels of use of memorisation, elaboration and control strategies, socio-economic disparities in the reported use of learning strategies are relatively large. Panama is the only country where socio-economically advantaged students are not more likely than disadvantaged students – as identified by the top and the bottom quarters of the *PISA index of economic, social and cultural status* – to use control strategies. The difference in the reported use of control strategies between advantaged and disadvantaged students is 0.46 on average across OECD countries. It is less than 0.2 only in Turkey and the partner countries Peru, Montenegro and Kyrgyzstan, while it is 0.78 in Korea (Figure III.2.21 and Table III.2.13).

Countries differ widely in the extent to which students reported using memorisation, elaboration and control strategies (Tables III.1.18, III.1.19 and III.1.20). Among OECD countries, the use of memorisation strategies is particularly pronounced in Hungary, followed by Austria and Poland, while students in Japan reported using memorisation strategies relatively rarely. Students in Japan reported using all three learning strategies - memorisation, elaboration and control - to a lesser degree, on average, than students in the other OECD countries. Elaboration strategies are widely used in Turkey and Portugal, while the use of control strategies is not very widespread in Japan, Norway and Finland.

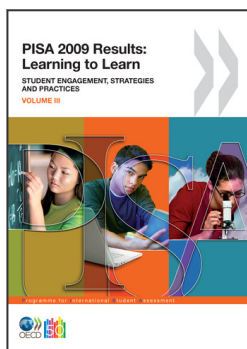
Countries where students consistently reported using one strategy were also those where students generally reported using other strategies regularly. Among OECD countries, the correlation between memorisation and elaboration strategies is 0.41, between memorisation and control strategies is 0.55, and between elaboration and control strategies is 0.55. Despite this strong association in the use of different learning strategies, some countries show very different patterns. In Italy, for example, the use of control strategies is relatively common, but the use of both memorisation and elaboration strategies is relatively rare.





## Notes

1. A detailed description of how the *index of enjoyment of reading* was constructed can be found in Annex A1.
2. A detailed description of how the *index of enjoyment of reading* was constructed can be found in Annex A1.
3. Students with values in the bottom quarter of the *PISA index of economic, social and cultural status* in the country of assessment are considered socio-economically disadvantaged and students with values in the top quarter of the index are considered socio-economically advantaged.
4. A detailed description of how the *index of understanding and remembering* was constructed can be found in Annex A1.
5. A detailed description of how the *index of summarising* was constructed can be found in Annex A1.
6. A detailed description of how the *index of understanding and remembering* are the *index of memorisation strategies* were constructed can be found in Annex A1.



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