



3

Tackling Gender and Socio-Economic Inequalities in Reading

Girls outperform boys in reading in all countries assessed by PISA. This chapter discusses the extent to which reading and learning habits relate to these performance differences between boys and girls, and between socio-economic groups. It then examines whether those habits that are associated with better reading performance could be more widely encouraged among boys and among students from disadvantaged backgrounds to help minimise differences in reading proficiency. The chapter also highlights underachievement among disadvantaged boys.

Findings from PISA 2000 suggested that the usually lower level of reading performance among socio-economically disadvantaged students is no longer evident if these students report high levels of engagement in reading (OECD, 2002). Other research too shows that disadvantaged students who are highly engaged in diverse reading activities, who enjoy reading and rely on appropriate learning strategies to solve reading tasks, appear to be able to compensate for fewer opportunities they have at home and in their schools by generating learning opportunities themselves (Guthrie, Schafer and Huang, 2001). Similarly, although girls generally outperform boys in reading (Cole, 1997; OECD, 2001; Smith and Wilhelm, 2009), when boys enjoy reading, when they read widely and adopt learning strategies extensively, they can attain higher levels of performance in reading than girls.

The aim of the chapter is to assess to what extent reading habits and approaches to learning contribute to the observed performance differences between boys and girls, and among socio-economic groups. If this relationship can be established and its causal nature inferred through other sources and methods (Annex A3.b), such analyses can provide insights for policy makers as to whether the gender gap in reading performance could be reduced if boys were keen readers and effective learners. These analyses could also determine whether socio-economic differences in reading performance could be reduced if disadvantaged students enjoyed reading, read widely for enjoyment, and adopted effective learning strategies.

As discussed in Volume I, *What Students Know and Can Do*, girls outperform boys in the PISA 2009 reading assessment in every participating country by an average, across OECD countries, of 39 PISA score points – the equivalent of an average school year. However, gender differences are much wider in some countries and economies than in others and also vary across different parts of the performance distribution. The gender gap is particularly wide in Finland, Slovenia, the Slovak Republic, Poland and the partner countries and economy Qatar, Dubai (UAE), Croatia, Montenegro, Kyrgyzstan, Jordan, Trinidad and Tobago, Lithuania, Bulgaria and Albania (see Table I.2.3). In contrast, in Chile and the Netherlands, and in the partner countries Colombia, Peru and Azerbaijan, the gender gap is comparatively small. Although girls have better reading skills than boys, on average, the gap is especially wide among low-achieving students (OECD, 2001; Grigg, Daane, Jin and Campbell, 2002; OECD, 2002; OECD, 2008a). In most countries and economies, boys greatly outnumber girls among those students who lack basic reading skills, or among students who do not attain Level 2 in reading proficiency (Figure I.2.2).

Volume II, *Overcoming Social Background*, confirms that in all countries and economies, students who come from socio-economically disadvantaged backgrounds show lower levels of reading performance in PISA 2009 than their better-off peers. Even countries and economies that have had successes in reducing socio-economic disparities have only been able to reduce, but not eliminate, the influence of socio-economic background on reading performance (Figures II.3.2 and II.3.3). Socio-economic differences are often compounded by racial and ethnic differences in achievement, as many poor children and adolescents are also from minority groups, and their native languages are often different than the languages in which reading is taught in school (Snow and Biancarosa, 2003; Strickland and Alvermann, 2004).

Despite the large body of evidence on the persistence of gender and social inequalities in reading performance, and on the different mechanisms involved in perpetuating the gender gap and social differentials (Volumes I and II), not enough is known about the extent to which engaging in reading and using learning strategies ameliorates gender and socio-economic differences in reading achievement.

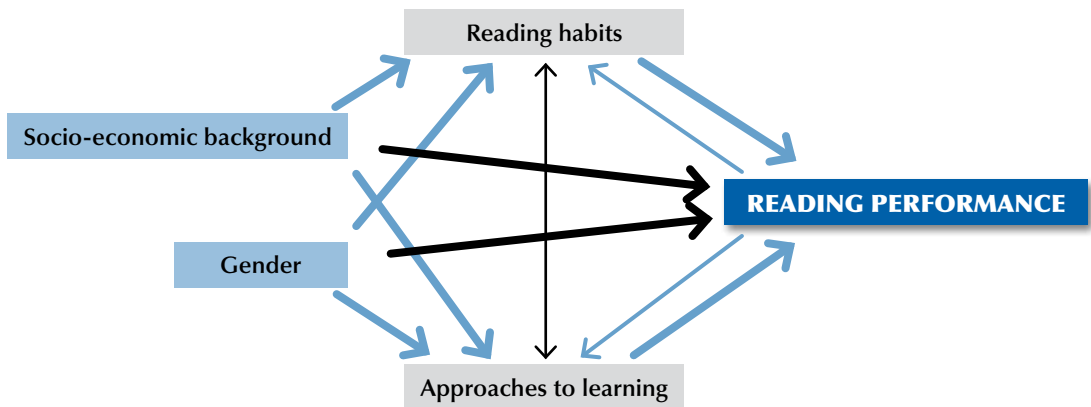
INEQUALITIES IN READING PERFORMANCE AND THE ROLE OF ENGAGEMENT IN READING AND LEARNING STRATEGIES

Inequalities in reading performance are the result of a complex web of relationships and practices. Figure III.3.1 shows how this chapter attempts to disentangle the extent to which the associations between gender and reading performance, and socio-economic background and reading performance could be due to students' reading habits and the way in which they approach learning. The black arrows represent the hypothetical influence of gender and socio-economic background on reading habits and learning strategies, and the hypothetical influence of reading habits and learning strategies on reading performance. The grey arrows represent other factors that could be responsible for gender and socio-economic disparities in reading performance.

Figure III.3.1 depicts how findings presented in Volume I on the magnitude of gender differences in reading, and findings presented in Volume II on socio-economic inequities can be interpreted in the light of disparities in engagement in reading and learning strategies. The figure also shows the strength of the association between engagement, learning strategies and reading performance.



■ Figure III.3.1 ■
How engagement in reading activities and approaches to learning contribute to disparities in reading performance



Why are boys less engaged in reading than girls? At least three explanations have been suggested. One focuses on differences between brain structure and function for boys and girls; but the links between these differences and different behaviour in areas such as reading have not been established empirically (Ruble, Martin and Berenbaum, 2006). A second focuses on socialisation issues around gender identity and how different activities are more or less appropriate for males and females. Reading is often defined as a feminine activity, which means that some males reject it as inappropriate (Osmont, 1987; Smith and Wilhelm, 2009; Ruble *et al.*, 2006). Third, Smith and Wilhelm (2002, 2006) found that boys reject some types of reading, especially in school, but that they do enjoy certain kinds of reading related to other activities in which they participate. This research suggests that boys' interest in reading may be confined to certain types of reading.

PISA shows major gender differences in the extent to which boys and girls, but also students from socio-economically advantaged and disadvantaged backgrounds, report being engaged in reading and knowing about learning strategies (Chapter 2). These findings closely resemble findings in the literature on boys' general lack of interest in reading and the low levels of interest in reading among students from disadvantaged socio-economic backgrounds. Some observational and interview studies, for example, indicate that boys often feel that it is "inappropriate" and "contrary to their masculine identity" to show interest in school, in general, and in reading, in particular (Paechter, 1998; Francis, 2000; Warrington, Younger and Williams, 2000; Smith and Wilhelm, 2002; Smith and Wilhelm, 2006). PISA data cannot establish the extent to which the association between engagement in reading and knowledge of appropriate learning strategies can be considered causal. Observational studies, however, have illustrated that one of the major factors for boys' underachievement in language is their lack of interest in reading and writing, and engagement with literacy (Safford, O'Sullivan and Barrs, 2004). Boys also appear to experience greater peer pressure to conform to masculine identities than girls (Younger and Warrington, 1996; Warrington *et al.*, 2000), and this identity is marked by a relative lack of interest in schooling and reading (Clark and Trafford, 1995).

Recent work has also highlighted how academic achievement can be determined by self-stereotyping and, implicitly, by people's attitudes and beliefs about their own identity. For example, Asian-American women performed better on a mathematics assessment when they were told the reason for doing the test was to identify ethnic differences in performance – because of the stereotype that Asians have higher quantitative skills than other ethnic groups (Steen, 1987) – but worse when they were told that the reason for them taking the assessment was to identify gender differences – because of the common stereotype that women have inferior quantitative skills than men (Benbow, 1988; Hedges and Nowell, 1995), compared with a control group that was not told anything about reasons for taking the assessment (Shih, Pittinsky and Ambady, 1999). Elderly people who had absorbed a negative stereotype of memory abilities also performed worse on a memory task than elderly people who had absorbed positive stereotypes of the elderly (Levy, 1996).

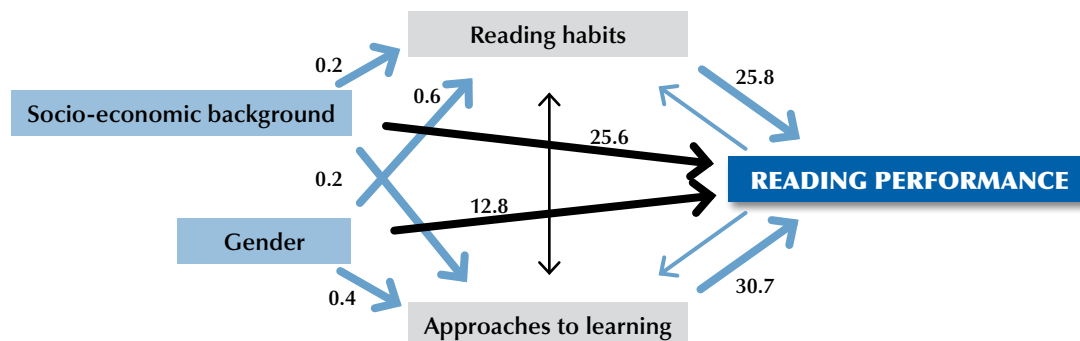
Other work on identity suggests that some minority students distance themselves from school as a way to protect their self-esteem. For instance, Osborne (1995, 1997) found that correlations of grades, test scores, and self-esteem are lower for African-American males than for other groups, and interpreted this finding as indicating that these students' identities and self-esteem are based on other qualities besides school achievement. Broader factors that are important to consider are some students' sense that they are treated differently by teachers because of their background, or that even if they do succeed in school, there will be no economic benefits for them later on because of their group membership and backgrounds (Murdock, 2009). Together, these findings provide for a better understanding of the nature of the relationships that are discussed below.

Enjoyment of reading and awareness of effective learning strategies to summarise information are two distinct, yet complementary, aspects of students' approaches to reading and learning. Chapter 2 shows how these factors are associated with reading performance. Enjoyment of reading is one of the motivating aspects of learning, while awareness of appropriate strategies to summarise information is a meta-cognitive and self-regulatory aspect of learning (Hacker, 2004; Schiefele, 2009; Zimmerman and Clearly, 2009). Since enjoyment of reading is closely associated with other indicators used to characterise engagement in reading activities, and an awareness of effective summarising strategies is closely associated with students' use of other effective learning strategies, this section develops models based on these two key indicators, even though the aim is to assess the potential role of engagement and learning strategies more broadly.

Reading habits and approaches to learning are potentially important mediators of gender inequalities in reading performance, but their role is more limited in the case of socio-economic inequities. On average across OECD countries, almost 70% of the difference in reading performance between boys and girls is the indirect result of disparities in how much boys and girls reported enjoying reading and knowing about effective strategies to summarise information. However, only about 30% of the difference in reading performance between socio-economically advantaged and disadvantaged students is the indirect result of disparities in how much socio-economically advantaged and disadvantaged students reported enjoying reading and knowing about effective strategies to summarise information.

■ Figure III.3.2 ■

How engagement in reading activities and learning strategies contribute to disparities in reading performance across OECD countries



Source: OECD, PISA 2009 Database, Table III.3.10.
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HOW READING HABITS AND APPROACHES TO LEARNING MEDIATE THE GENDER GAP IN READING PERFORMANCE

Tables III.3.1 and III.3.10 and Figure III.3.3 suggest that a large share of gender differences in reading performance may stem from disparities in the enjoyment of reading and knowledge about effective summarising strategies.

Figure III.3.3 shows countries and economies with a relatively large gender gap in reading performance, and illustrates the extent to which engagement in reading and approaches to learning could help narrow such a gap. The vertical axis plots countries on the basis of the score point difference in the reading assessment between boys



and girls (Table I.2.3). The horizontal axis shows the extent to which the total gender gap in reading performance is mediated by enjoyment of reading and awareness of effective strategies to summarise information in different countries. Countries in the top-right corner of Figure III.3.3 are countries with a large gender gap in reading performance, where a large share of gender differences in reading are mediated by boys' and girls' engagement in reading and how positively they approach learning. In contrast, countries in the bottom-left corner of Figure III.3.3 are countries where differences in the reading performance of boys and girls are smaller, and where gender differences in reading performance are not strongly mediated by these actions and attitudes. Countries in the top-right corner of Figure III.3.3 are those where policies aimed at promoting engagement in reading and positive approaches to learning among boys could be particularly useful.

The fact that, on average, boys enjoy reading substantially less than girls and have less extensive knowledge about effective summarising strategies than girls explains a large part of the gender gap in reading performance in most countries and economies. In Finland, where boys score an average of 55 points lower than girls in the PISA reading assessment, differences in the extent to which boys and girls enjoy reading and are aware of effective learning strategies to summarise information represent almost 80% of the overall gender difference in reading performance.

■ Figure III.3.3 ■

The role of engagement in reading and approaches to learning as mediators of gender differences in reading performance



Source: OECD, PISA 2009 Database, Tables III.3.1 and I.2.3.
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In Poland and the partner country the Russian Federation, where gender disparities in the PISA reading assessment are above the OECD average, enjoyment of reading and awareness of effective learning strategies influence these differences far less, representing about half of the overall gender differences in reading performance. In the partner economy Shanghai-China, however, where boys and girls also show relatively large score point disparities in the PISA reading assessment (with a mean score difference of 40 points), the mediating role of engagement in reading and approaches to learning represents only about one-third of the overall gender differences in reading performance (Tables I.2.3, III.3.1 and III.3.10).

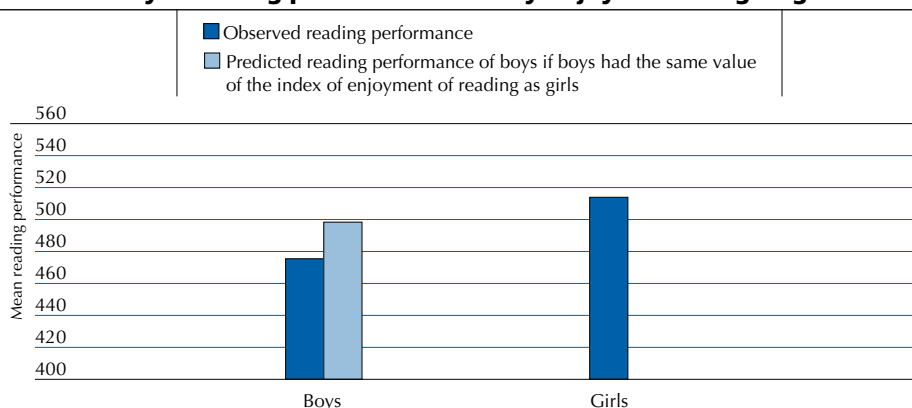
On average, boys enjoy reading less than girls. However, in all countries and economies that participated in PISA, differences in enjoyment of reading between genders are far smaller than differences in enjoyment levels within genders: on average across OECD countries, the difference in enjoyment of reading between boys and girls is 0.6 index points (Table III.1.1). This difference ranges from less than 0.3 in Korea and the partner countries Kazakhstan, Jordan, Colombia, Panama, Peru, Indonesia and Azerbaijan, to over 0.8 in Finland, Germany, Canada, Austria, Switzerland and the partner country Lithuania (Table III.1.1). The difference between the quarter of boys who reported enjoying reading the most in their country and the quarter who enjoy reading the least, however, is far greater: it is above 2.0 across OECD countries, ranging from 1.8 in Mexico to 2.8 in Switzerland and, among the partner countries, ranging from 1.2 in Indonesia to 2.7 in Liechtenstein (Table III.3.2). This means that while factors such as predisposition, temperament, peer pressure and socialisation may lead boys to enjoy reading less than girls in general, boys could be encouraged to enjoy reading more and to read more for enjoyment. Similarly, recent qualitative studies suggest that at least some adolescent girls lose interest in reading in secondary school, especially in the reading required for school. This is partly because of the kind of reading required and because girls and boys may be treated differently in classrooms (Guzetti, 2008, 2009; Guzetti and Gamboa, 2004). These findings show that it is not only boys who can lose interest in some forms of reading.

Results presented in Tables III.3.3 and III.3.4 show that the gap between boys and girls could be narrower if boys had higher levels of motivation to read and used effective learning strategies. Figures III.3.4 and III.3.5 illustrate the predicted reading performance of boys if boys enjoyed reading as much as girls and shared their levels of knowledge about effective learning strategies.¹


Results presented in Table III.3.3 indicate that in all countries and economies that participated in PISA, if boys had the same levels of awareness about effective strategies to summarise information as girls in their countries, their reading performance would be higher. Table III.3.4 indicates that this would be the case in all countries and economies – except Kazakhstan – if the levels of boys' enjoyment of reading matched the levels that girls currently have. In Finland, Sweden and Germany the score point difference between what boys could achieve if they enjoyed reading as much as girls did and what they currently demonstrate in PISA is large: equivalent to 30 points or more, almost half a proficiency level. On average across OECD countries, the untapped potential of boys, represented by their unsatisfactory levels of internal motivation to read, is 23 points. In 32 countries, the gap would be predicted to be 20 score points narrower.

■ Figure III.3.4 ■

Boys' reading performance if they enjoyed reading as girls



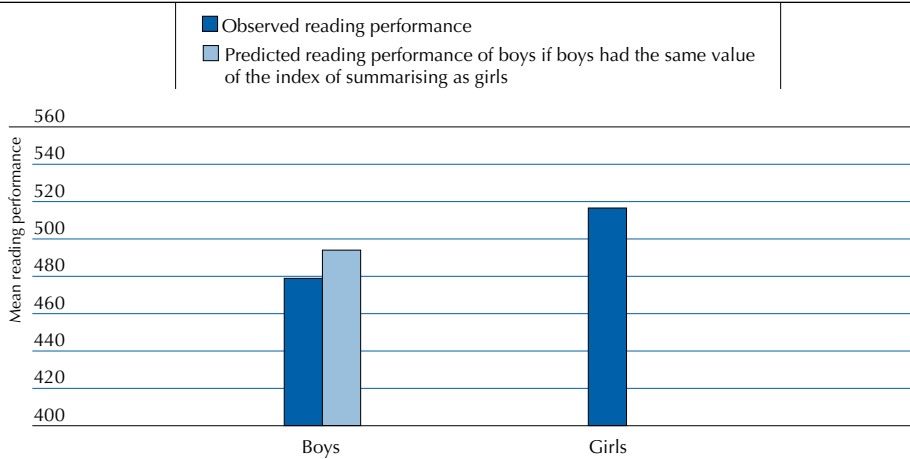
Source: OECD, *PISA 2009 Database*, Table III.3.4.

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■ Figure III.3.5 ■

Boys' reading performance if they were as aware of effective summarising strategies as girls




Source: OECD, *PISA 2009 Database*, Table III.3.3.
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Table III.3.3 shows that in as many as 16 countries, if boys had the same levels of awareness about which summarising strategies were most effective as the girls in their countries do, their reading performance would be predicted to be at least 15 points higher. In Finland and the partner country Liechtenstein, the predicted change in reading performance that could occur if boys were equally aware as girls of the most effective strategies to summarise complex information would be more than 20 points.

HOW READING HABITS AND APPROACHES TO LEARNING MEDIATE SOCIO-ECONOMIC INEQUITIES IN READING PERFORMANCE

Some 15-year-olds who come from the most socio-economically disadvantaged homes, but who are highly engaged in reading and who approach learning positively, achieve higher reading scores than students who come from highly or moderately privileged families but who are poorly engaged in reading and do not approach their learning effectively. However, these students are relatively rare in the countries and economies that participate in PISA (Table III.2.13). The *PISA index of economic, social and cultural status* used to characterise students' socio-economic background is based on several components (Volume II, *Overcoming Social Background*, for a detailed description). Two of those components are parental education and the number of books that are available in the students' households. Educated parents and those who have many books in their homes are more likely to read to their children when they are young and to be positive role models for their children by being enthusiastic and engaged readers (Baker, Scher and Mackler, 1997; Klauda, 2009). One of the primary channels through which a socio-economically advantaged status² may determine reading achievement is by providing opportunities for students to develop high motivation to read and use effective learning strategies.

In most countries and economies, socio-economic inequities in reading performance can be partly explained by differences in students' reading habits and their approaches to learning (Tables III.3.1 and III.3.10). On average across OECD countries, approximately one-third of the association between reading performance and socio-economic background is mediated by the extent to which students enjoy reading and are aware of effective strategies to summarise information.³ The role of enjoyment of reading and learning strategies is particularly pronounced in Switzerland, Iceland, Denmark, Australia, Norway, Belgium and in the partner country and economy Liechtenstein and Chinese Taipei. It is generally greater in OECD countries than in partner countries and economies.

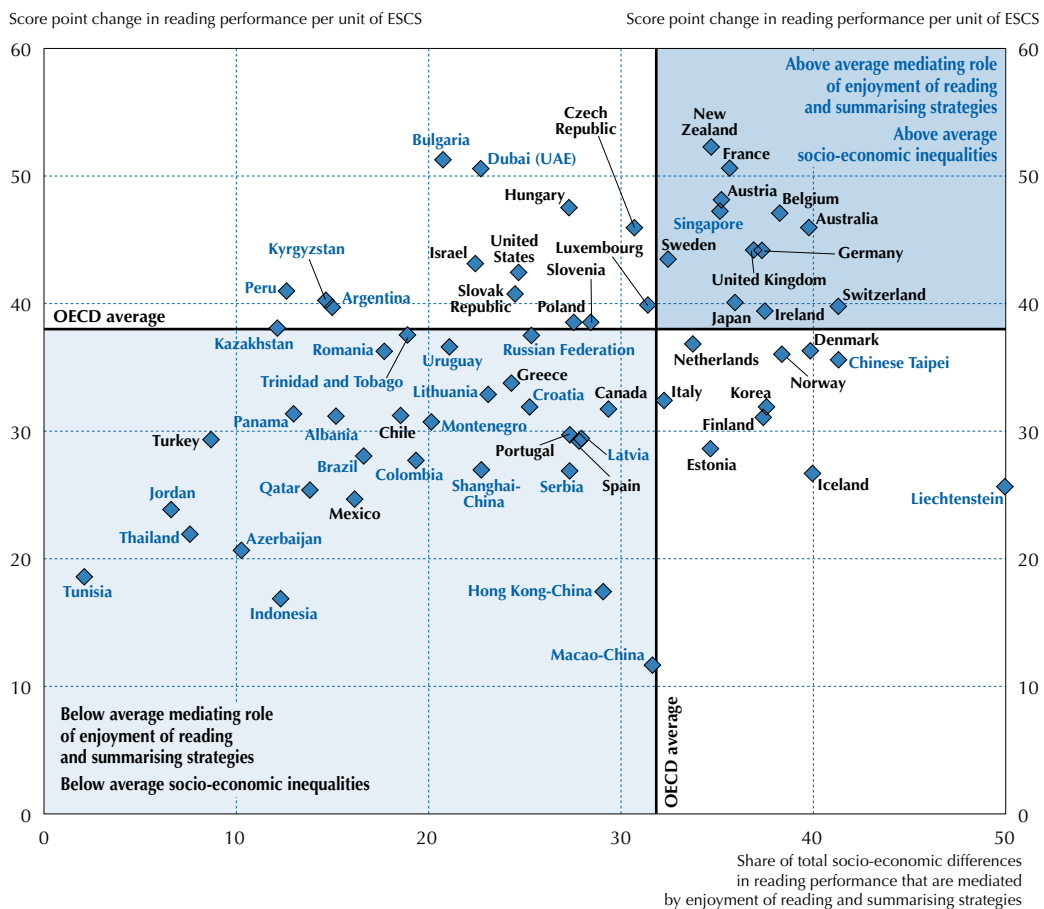
Figure III.3.6 shows countries and economies with relatively large socio-economic disparities in reading performance and the extent to which engagement in reading and approaches to learning could help tackle such disparities. The vertical axis plots countries on the basis of the score point difference in reading that is associated with a one-unit change in the *PISA index of economic, social and cultural status* (Table II.3.12). This is the slope of the social gradient: the average difference in reading performance between students with a difference equal to

one unit in the *PISA index of economic, social and cultural status*. The horizontal axis shows the extent to which the total association between socio-economic background and reading performance is mediated by enjoyment of reading and awareness of effective learning strategies to summarise information in different countries. Countries in the top-right corner of Figure III.3.6 are those with large socio-economic differences in reading performance and where the effect of socio-economic background on reading performance is mediated to a large extent by engagement in reading and approaches to learning. In contrast, countries in the bottom-left corner of Figure III.3.6 are those that show fewer socio-economic differences in reading performance and where the association between socio-economic background and reading performance is not particularly mediated by engagement in reading and approaches to learning. Countries in the top-right corner of Figure III.3.6 are those where policies aimed at promoting engagement in reading and positive approaches to learning among socio-economically disadvantaged students could be particularly useful.


Not all countries and economies show substantial socio-economic differences in reading performance. However, New Zealand, France, Hungary, Israel, Belgium, Australia, the Czech Republic, the United Kingdom and the partner country and economy Bulgaria and Dubai (UAE) all show relatively large socio-economic variations in reading performance,⁴ and in all of them, a substantial share of the overall association between socio-economic background and reading performance is mediated by the extent to which students enjoy reading and know how to summarise complex information.⁵

■ Figure III.3.6 ■

The role of engagement in reading and approaches to learning as mediators of socio-economic disparities in reading performance



Source: OECD, *PISA 2009 Database*, Tables III.3.1 and II.3.2.

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These countries could greatly reduce disparities in reading performance by promoting higher levels of engagement in reading activities and positive approaches to learning among socio-economically disadvantaged students. Iceland is a country where approximately 40% of the overall association between socio-economic status and reading performance is mediated by engagement in reading and approaches to learning. However, in Iceland, socio-economic disparities in reading performance are relatively small.⁶ Among partner countries and economies, in Liechtenstein, almost 50% of the overall association between socio-economic status and reading performance is mediated by engagement in reading and approaches to learning. However, in Liechtenstein, socio-economic disparities in reading performance are relatively small.⁷ The partner country and economy Bulgaria and Dubai (UAE) both show fairly large socio-economic disparities in reading performance, but engagement in reading and approaches to learning are not particularly important mediators of socio-economic inequities in reading performance in these countries and economies (Table III.3.1).⁸

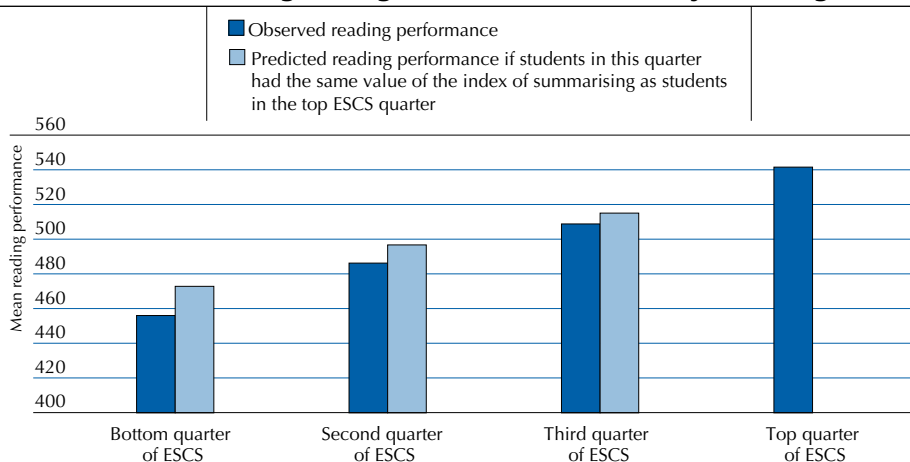
Results presented in Tables III.3.5 and III.3.6 show that students from socio-economically disadvantaged backgrounds would be predicted to perform significantly closer to advantaged students if they had higher levels of engagement in reading and approached their learning more positively. Figures III.3.7 and III.3.8 illustrate the predicted reading performance of socio-economically disadvantaged students if these students enjoyed reading as much as students from more advantaged backgrounds and if they had similar levels of knowledge about effective learning strategies.⁹

Results presented in Table III.3.5 indicate that, in as many as 31 countries and economies, if the most socio-economically disadvantaged students had the same levels of awareness about summarising strategies as the most advantaged students in their countries and economies, their reading performance would be at least 15 points higher. In Belgium, Hungary, Germany, Switzerland, Austria, France, Luxembourg, New Zealand, Portugal and the partner countries and economy Liechtenstein, Uruguay and Dubai (UAE), the score point difference between what socio-economically disadvantaged students could achieve if they had the same levels of knowledge about effective summarising strategies as advantaged students is more than 20 points. On average across OECD countries, the untapped potential of socio-economically disadvantaged students, represented by their low levels of awareness about learning strategies, is 17 points. Across OECD countries, if disadvantaged students used effective learning strategies to the same extent as students from more advantaged backgrounds did, their performance gap would be almost 20% narrower. In Korea, Belgium, Finland and the partner country Liechtenstein, the gap would be 25% narrower.

Table III.3.6 also suggests that in as many as 27 countries and economies, if the most socio-economically disadvantaged students had the same levels of enjoyment of reading as the most advantaged students, their reading performance could be at least 15 points higher. In Ireland, Australia, New Zealand, France, Switzerland, Germany, the United Kingdom, Denmark, Hungary, Austria and the partner country and economy Chinese Taipei and Singapore, the predicted change in reading performance would be 20 points or more.


■ Figure III.3.7 ■

Reading performance of socio-economically disadvantaged students if they were as aware of effective summarising strategies as socio-economically advantaged students

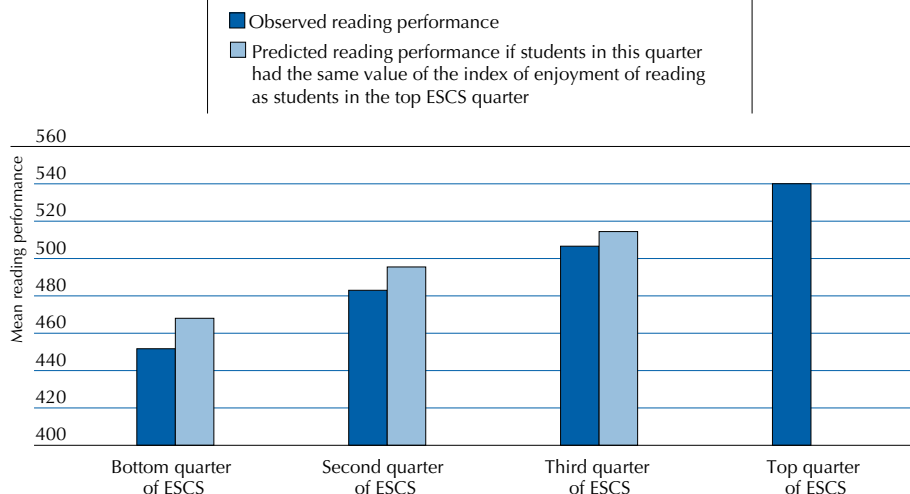


Note: Socio-economically disadvantaged (advantaged) students are students in the bottom (top) quarter of the PISA index of economic, social and cultural status (ESCS) within their country of assessment.

Source: OECD, *PISA 2009 Database*, Table III.3.5.

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■ Figure III.3.8 ■
Reading performance of socio-economically disadvantaged students if they enjoyed reading as much as socio-economically advantaged students



Note: Socio-economically disadvantaged (advantaged) students are students in the bottom (top) quarter of the PISA index of economic, social and cultural status (ESCS) within their country of assessment.

Source: OECD, *PISA 2009 Database*, Table III.3.6.

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Reading proficiency is the key that allows students to build on the skill base they acquire at school and to go on to become lifelong learners. If young people leave formal education before they have learned how to learn, they will not be able to update their skills to meet the needs of a fast-changing and increasingly globalised labour market. Economic growth depends, to a large extent, on a workforce that is flexible and able to adapt to different needs. Countries that fail to ensure that disadvantaged students can escape from a cycle of low skills and low wages that are transmitted across generations not only pay a heavy human cost, but also significant costs in lost productivity and economic growth.

THE UNDERACHIEVEMENT OF DISADVANTAGED BOYS

Table III.3.7 identifies in socio-economically disadvantaged boys a group of students that is particularly likely to underperform in the PISA reading assessment in all countries and economies that participate in PISA. The low reading proficiency among socio-economically disadvantaged boys is of concern because, without the ability to read well enough to participate fully in society, these students and their future families will have fewer opportunities to escape poverty and deprivation. Societies characterised by low levels of social mobility and intergenerational transmission of deprivation are not only unfair societies, but may also be less productive because they do not make use of all their potential (Volume II of this report and OECD, 2008b). Socio-economically disadvantaged boys are also more likely to abandon school as soon as it is legally possible, even if they have no or few qualifications, and are unlikely to participate in other training or educational opportunities later in their lives.

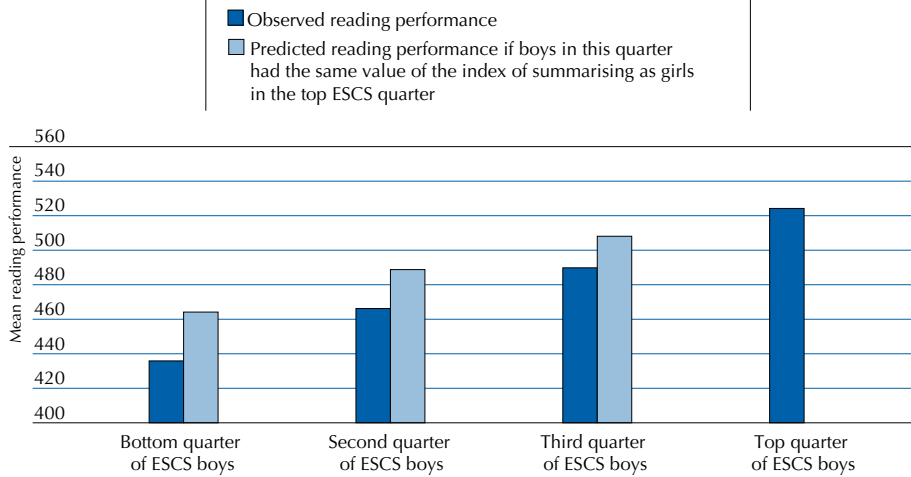
Previous sections of this chapter have illustrated how enjoyment of reading and knowledge of effective summarising strategies may influence both gender and socio-economic differences in reading proficiency. Results presented in Tables III.3.8 and III.3.9 indicate that socio-economically disadvantaged boys could be predicted to catch up with advantaged girls if they had higher levels of motivation to read and used effective learning strategies. Figures III.3.9 and III.3.10 illustrate the predicted reading performance of boys if they enjoyed reading as much as girls did and had similar approaches to learning.¹⁰

Results presented in Table III.3.8 indicate that in all countries and economies that participated in PISA, if disadvantaged boys had the same levels of awareness about effective learning strategies as advantaged girls in their countries and economies do, their scores in reading would be predicted to be higher. Table III.3.9 similarly indicates that this would be the case in most countries and economies if the levels of these boys' enjoyment of reading matched the

levels that socio-economically advantaged girls now have. In Australia, Finland, Switzerland, New Zealand and Germany, the score point difference between what socio-economically disadvantaged boys would be predicted to achieve if they enjoyed reading as much as advantaged girls do and what they currently demonstrate in PISA is large: equivalent to 45 points or more. On average across OECD countries, the untapped potential of socio-economically disadvantaged boys, represented by their low levels of internal motivation to read, is 35 points. Across OECD countries, if these boys had the same level of awareness of effective summarising strategies as socio-economically advantaged girls do, the gap between their performance and the average student's performance would be predicted to be a third narrower.

■ Figure III.3.9 ■

Reading performance of socio-economically disadvantaged boys if they were as aware of effective summarising strategies as socio-economically advantaged girls



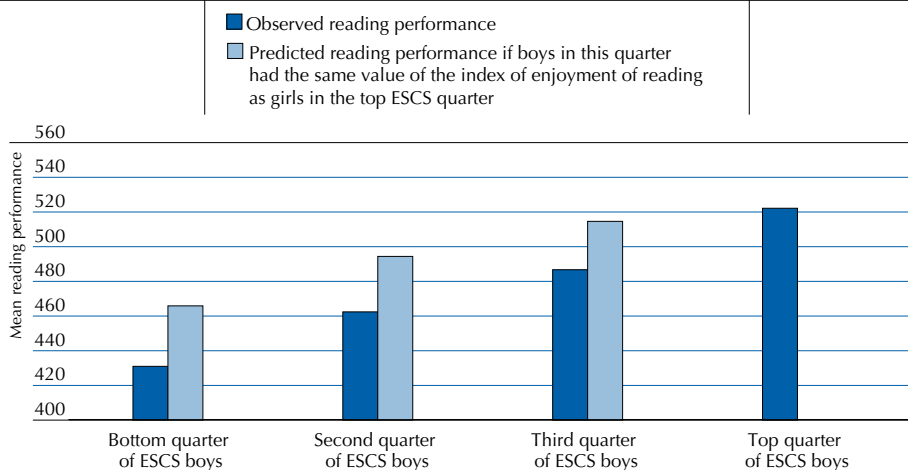
Note: Socio-economically disadvantaged (advantaged) students are students in the bottom (top) quarter of the PISA index of economic, social and cultural status (ESCS) within their country of assessment.

Source: OECD, *PISA 2009 Database*, Table III.3.8.

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■ Figure III.3.10 ■

Reading performance of socio-economically disadvantaged boys if they enjoyed reading as much as socio-economically advantaged girls



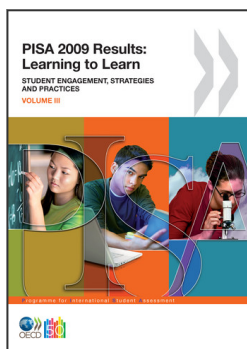
Note: Socio-economically disadvantaged (advantaged) students are students in the bottom (top) quarter of the PISA index of economic, social and cultural status (ESCS) within their country of assessment.

Source: OECD, *PISA 2009 Database*, Table III.3.9.

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Notes

1. See the *PISA 2009 Technical Report* (OECD, forthcoming) for a detailed description of the modelling used to predict changes in reading performance.
2. In this context, “socio-economically advantaged students” refers to students in the top quarter of the *PISA index of economic, social and cultural status* in their country.
3. The share of the **total effect** of the *PISA index of economic, social and cultural status* (ESCS) on reading performance that is mediated by enjoyment of reading and awareness of effective learning strategies is calculated in the following way: two regressions were run. The first estimated reading performance as a function of ESCS, gender, immigration status and language spoken at home. The second regression estimated reading performance as a function of ESCS, gender, immigration status and language spoken at home, and enjoyment of reading and awareness of summarising strategies. The **indirect effect** of ESCS on reading performance is represented by the difference in the co-efficient for ESCS estimated in the first regression and the co-efficient for ESCS estimated in the second regression. The **share of ESCS mediated by enjoyment of reading and awareness of effective learning strategies** was calculated by dividing the **indirect effect** of ESCS over the ESCS co-efficient estimated in the first regression. These results are in line with those obtained using path models presented in Table III.3.10.
4. In all these countries, the score point difference that is associated with a difference of one standard deviation of the indicator of socio-economic background is 44 points or more.
5. In these countries, more than 20% of the association between the *PISA index of economic, social and cultural status* and reading performance is mediated by enjoyment of reading and knowledge of effective learning strategies.
6. In Iceland, a one-unit change in the *PISA index of economic, social and cultural status* is associated with a score point difference in reading of 27 points.
7. In Liechtenstein, a one-unit change in the *PISA index of economic, social and cultural status* is associated with a 26 score point difference in reading.
8. In Bulgaria and Dubai (UAE), the difference in reading performance between socio-economically advantaged and disadvantaged students is more than 50 points, and about 20% of socio-economic disparities can be explained by differences in levels of enjoyment of reading and knowledge of effective strategies to summarise information.
9. See the *PISA 2009 Technical Report* (OECD, forthcoming) for a detailed description of the modelling used to predict changes in reading performance.
10. See the *PISA 2009 Technical Report* (OECD, forthcoming) for a detailed description of the modelling used to predict changes in reading performance.



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