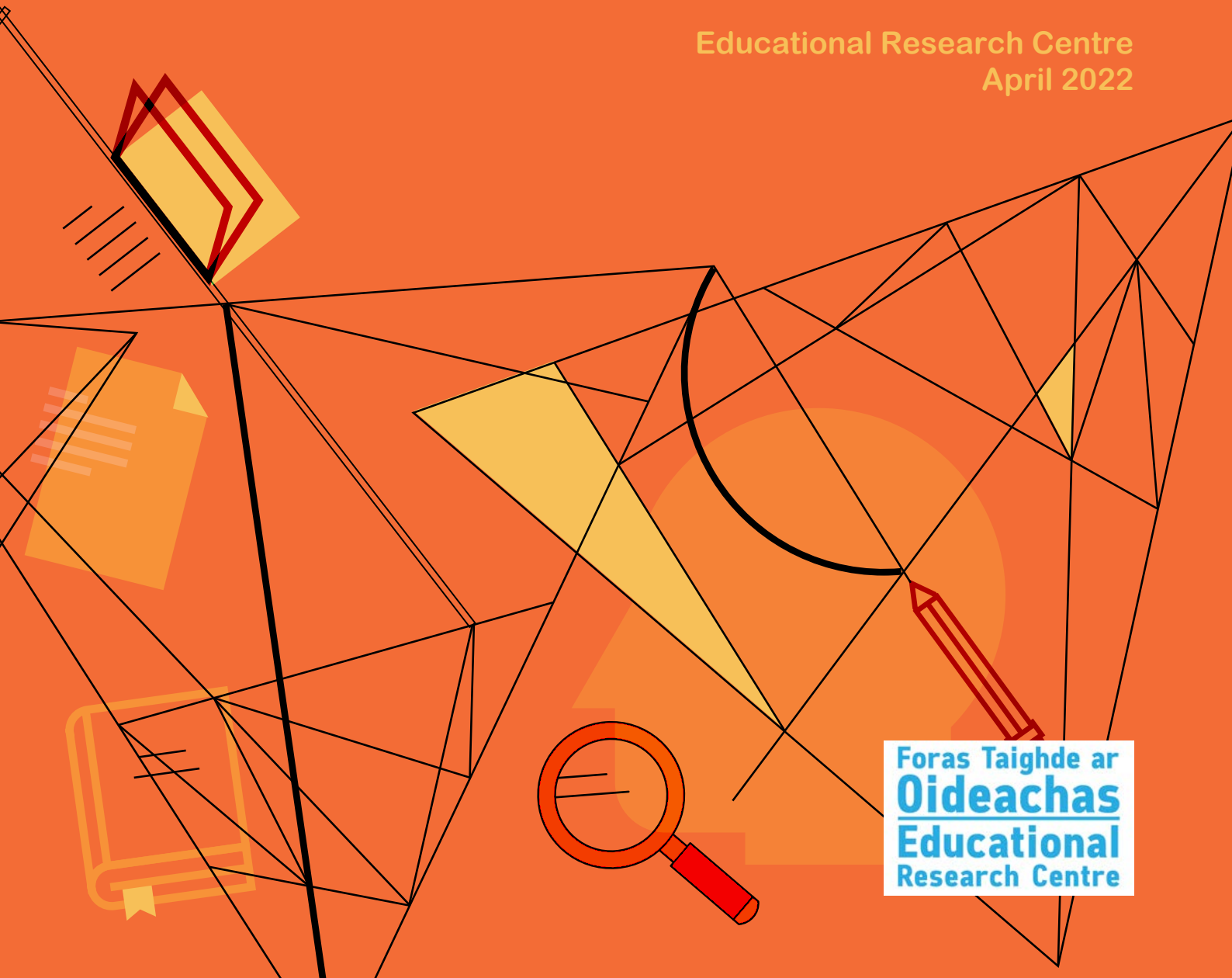
READING LITERACY IN IRELAND IN PISA 2018: PERFORMANCE, POLICY AND PRACTICE

Gerry Shiel, Gráinne McHugh,
Sylvia Denner, Mary Delaney and Jude Cosgrove,
with Caroline McKeown

Educational Research Centre
April 2022



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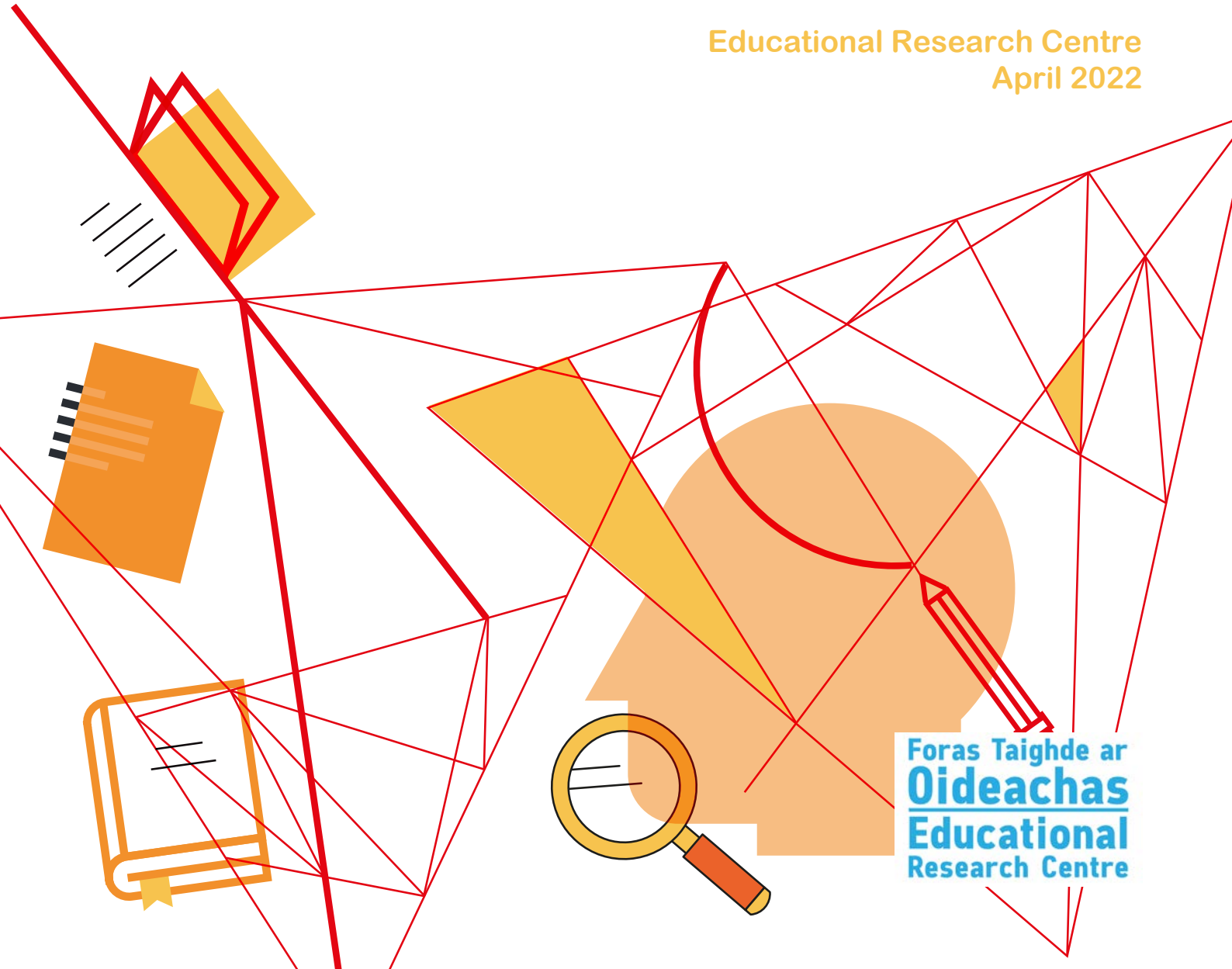

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Preface

The Programme for International Student Assessment (PISA) is an assessment of the skills and knowledge of 15-year-olds in reading literacy, science and mathematics. It is a study carried out under the direction of the Paris-based Organisation for Economic Cooperation and Development (OECD). PISA has taken place every three years since 2000, which makes PISA 2018 the seventh cycle. In each cycle, one domain is the major domain of assessment, and the remaining domains are assessed as minor domains. Reading literacy was the major assessment domain in 2018, with science and mathematics assessed as minor domains.

The assessment of reading literacy in PISA 2018 is important for a number of reasons: It is the first cycle in which PISA reading literacy has been assessed as a major assessment domain since PISA transitioned from paper-based to computer-based assessment in 2015; it is the first cycle in which reading literacy has been a major assessment domain since 2009, when the OECD reported large and significant declines in the performance of students in Ireland in reading and mathematics (though it is noted later in this report that the size of those declines may have been over-estimated); and finally, PISA 2018 is the final opportunity to evaluate the performance of students in Ireland against targets established as part of the current *National Literacy and Numeracy Strategy 2011-20* (DES, 2011, 2017a). This strategy was introduced in 2011 as a response to declines in the performance of students in Ireland in PISA 2009 and was reviewed in 2017. The current report seeks to take in in-depth look at reading literacy in PISA 2018, in the context of these important international and national issues.

PISA 2018 was administered in 79 countries, including 37 OECD countries. Tests and questionnaires were completed by over 600,000 students worldwide. In Ireland, 5,577 students in 157 schools took part. PISA is implemented in Ireland by the Educational Research Centre, on behalf of the Department of Education.

The purpose of this report is to provide an in-depth analysis of the performance of students in Ireland on reading literacy in PISA 2018, as well as changes between 2018 and earlier cycles of PISA, with specific reference to the policy contexts in which such changes have occurred. In addition to examining reading performance in detail, a range of school, home and student factors associated with reading achievement are also considered.

This report is divided into eight chapters. Chapter 1 provides an introduction to the assessment of reading literacy in PISA 2018 and outlines the policy context in which PISA 2018 took place. Chapter 2 summarises performance on reading literacy in PISA 2018. It includes previously unpublished information on how students in Ireland performed on clusters of items, such as trend items common to PISA 2015 and 2018. Chapter 3 examines selected key findings from the PISA questionnaires, including student reading engagement and use of reading strategies, use of digital technology for teaching and learning, and aspects of student wellbeing. Where relevant, these findings are reported in relation to student performance on reading literacy. Chapter 4 focuses on associations between home background variables and students' reading literacy, drawing in particular on data provided by parents of students who completed PISA 2018. Chapter 5 considers aspects of implementation of the National Literacy and Numeracy Strategy, including the extent to which performance targets have

been achieved, and the implementation of aspects of the strategy in schools. Chapter 6 describes the teaching and assessment of English at Junior Cycle, based on a questionnaire administered to teachers of English in schools that participated in PISA 2018 in Ireland. Chapter 7 presents a multi-level model of reading literacy that explains the contributions to reading achievement of key school-, teacher-, parent- and student-level variables, while controlling for the effects of other variables. The final chapter comprises conclusions based on the current report, recommendations that arise from these, and a look ahead to the next PISA cycle, which is now due to take place in 2022.

Acknowledgements

PISA 2018 was implemented in Ireland by a team in the ERC led by Caroline McKeown (National Project Manager) and involved Sylvia Denner (Data Manager) and research assistants Sarah McAteer, Mary Delaney and Lynsey O'Keeffe. Ireland was represented on the OECD PISA Governing Board for PISA 2018 by Peter Archer and by Rachel Perkins (from September 2018). We gratefully acknowledge the contributions and advice of the National Advisory Committee (see below), who provided guidance and feedback throughout the development and implementation of PISA 2018 in Ireland and offered comments on an earlier version of this report. In particular, we acknowledge the help and support of Orlaith O'Connor, the Chair of the Committee.

We thank all those involved in implementing the PISA 2018 Field Trial in spring 2017, and the Main Study in spring 2018, including principal teachers, school contact persons and administrative staff who facilitated the involvement of their schools in PISA; and the members of the Inspectorate and the retired inspectors, principals and teachers who administered PISA in schools.

We also thank those who completed various elements of PISA 2018 main study, on which this report is based, including: students who completed the PISA tests and the Student Questionnaire; their parents, who completed the Parent Questionnaire; their English teachers, who completed the national Teacher Questionnaire, and their school principals, who completed the School Questionnaire. Thanks are due to our colleagues Sarah McAteer and Lynsey O'Keeffe for their work on the study. Thanks are also due to members of the PISA National Advisory Committee (see page x) who provided feedback on an earlier draft of this report.

Thanks are due to staff at the Educational Research Centre who supported us in completing this report, including Mary Lewis, who edited an advanced draft of the report, and Anne Comey, Imelda Pluck and Patricia Gaffney, who provided administrative support.

Gerry Shiel, Gráinne McHugh, Sylvia Denner, Mary Delaney, Jude Cosgrove and Caroline McKeown, April, 2022.

PISA National Advisory Committee

As of September 2021, members of the PISA National Advisory Committee were:

Orlaith O'Connor (Department of Education, Chair)

Paul Behan (National Council for Curriculum and Assessment)

Odilla Finlayson (Dublin City University)

Conor Galvin (University College Dublin)

Deirdre Henchy (State Examinations Commission)

Rachel Linney (National Council for Curriculum and Assessment)

Brendan MacMahon (National University of Ireland Galway)

Thomas McCloughlin (Dublin City University)

Brian Murphy (University College Cork)

Philip Matthews (Trinity College Dublin)

Maurice O'Reilly (Dublin City University)

Elizabeth Smith (Department of Education)

Rachel Perkins (ERC, PISA Governing Board representative)

Brenda Donohue (ERC, National Project Manager, PISA 2022)

Conall Ó Duibhir (ERC)

Sylvia Denner (ERC)

Theresa Walsh (ERC)

Executive Summary

This executive summary outlines key findings and recommendations in this report.

PERFORMANCE ON PISA 2018 READING LITERACY AND TRENDS OVER TIME

The overall performance of students in Ireland on reading literacy in PISA 2018 was strong, significantly better than in PISA 2009 (an 'outlier' year, see Chapter 1, Section 1.3), and similar to that reported for 2012 and 2015. Ireland's mean score on overall reading literacy in PISA 2018 was 518.1, with just three entities achieving significantly higher mean scores (Beijing-Shanghai-Jiangsu-Zhejiang (China), Singapore, and Macao (China)). While three OECD member countries ranked higher than Ireland (Estonia, Canada and Finland), none performed at a significantly higher level. This represents a strong improvement over PISA 2009, when reading literacy was also a major assessment domain in PISA, and Ireland's mean score (495.6) was not significantly different from the OECD average. Ireland's mean scores in 2012 (523.2) and 2015 (520.8) were also significantly above the corresponding OECD averages, and marginally higher than in 2018. PISA 2009 can be considered an outlier year – the first and only PISA cycle in which Ireland was not among the highest-performing countries in reading literacy since PISA began in 2000.

It is unclear to what extent the transition to online reading in PISA has impacted on the reading literacy performance of students in Ireland, if at all. PISA 2018 marked the first cycle in which reading was a major assessment domain following the transition to computer-based assessment in 2015 (when science was the major domain). The 2018 assessment included a combination of older PISA items, originally administered on paper, alongside new items specially developed to assess aspects of digital reading. Furthermore, 2018 was the first cycle in which multi-stage adaptive testing was incorporated in PISA, allowing for reading items to be matched to a test-taker's estimated level, estimating ability in real time over the course of the test. Analyses of reading items that appeared in the 2009, 2012, 2015 and 2018 PISA reading tests show that average performance on these in Ireland was similar in 2009 and 2018 (about 62% correct on average) and marginally higher in 2012 (65%) and 2015 (63%). This indicates stability in achievement after transitioning to computer-based assessment and introducing elements of adaptive testing. The average percent correct on 'new' PISA 2018 digital reading test items was 65%, which was marginally higher than performance on older reading items in 2018.

The mean scores of students in Ireland on the three PISA 2018 reading process subscales (Locating Information, Understanding, and Reflecting and Evaluating) were above the corresponding OECD averages, though students did relatively less well on Understanding. Although students in Ireland scored well above the corresponding OECD averages on all three of the reading process subscales in PISA 2018, performance was slightly stronger on Locating Information (520.7) and Evaluating and Reflecting (519.3) than on Understanding (510.2). Understanding involves recalling literal information, integrating ideas and generating inferences. Students in Ireland also achieved significantly higher scores on subscales for

Single Source and Multiple Source texts than the corresponding OECD average scores (by 27.5 and 26.5 score points respectively).

Detailed analyses of average percent correct scores on subsets of reading items in Ireland compared with the OECD averages reveal further information about relative strengths and areas in need of development among Irish students. On average, Irish students had a 5.2% advantage on all new reading items, and a 4.7% advantage on trend reading items, relative to the OECD average percentages correct. However, the Irish student advantage was smaller in three specific areas, suggesting that the following are aspects of reading that require further development among Irish students: comprehension of literal meaning; interpreting conflict within or across texts; and assessing the quality and credibility of text. Also, performance in Ireland was relatively weaker on items based on Multiple Source (58.1% correct) than on Single Source Texts (67.8% correct), though students across the OECD also had stronger performance on Single compared with Multiple Source text items.

The proportion of students in Ireland performing below Proficiency Level 2 on PISA 2018 reading literacy (11.8%) is considerably lower than in PISA 2009 (17.2%) and about half that of the OECD average (22.6%). Any further reductions in the percentages of low-performing students might focus on boys, since the percentage of low-achieving boys in Ireland (15.1%) is almost twice that of low-achieving girls (8.5%).

The proportion of higher-achieving students in Ireland (at proficiency Levels 5-6) in PISA 2018 was higher in 2018 (12.1%) than in 2009 (7.0%) and significantly higher than the OECD average in 2018 (7.7%). However, the proportion in Ireland compares less favourably with other high-performing countries in PISA 2018, including Singapore (25.8%), Canada (15.0%), Finland (14.2%) and Estonia (13.9%). Hence, there is scope to increase the proportion of higher-achieving students in reading literacy.

Female students in Ireland consistently outperform males on PISA reading and the analysis shows that there has been a narrowing in the achievement gap over time. In PISA 2018, the gender gap was 23.2 points compared to 39.2 points in 2009 (with a smaller OECD average difference of 29.7 in 2018, compared to 39.3 in 2009). Within Ireland, male students in 2018 achieved a mean score that was higher, by 30.1 score points, than that of their male counterparts in 2009. Among females, there was a corresponding increase of 14.1 score points. Hence, male students made a greater improvement between 2009 and 2018 compared with females. These changes should also be considered in the context of the transition from paper-based to computer-based assessment. Clearly, there is more to learn about gender differences in reading literacy, and particularly whether male students respond differently to questions based on digital texts, compared to questions based on paper-based ones.

Trends in performance below Level 2 by gender for Ireland compare favourably with corresponding trends across OECD countries. As noted above, the proportion of students in Ireland achieving below Level 2 on the overall reading scale in 2018 (11.8%) is low relative to other participating countries. However, the proportion of male students achieving below Level 2 in 2018 (15.1%) is relatively high, even though it represents a significant improvement since 2009 (23.1%), and is also well below the OECD average for male students in 2018 (27.7%). The latter is marginally, though significantly greater than the OECD average in 2009 (25.7%). In contrast, in 2018, just 8.5% of females in Ireland performed below Level

2, down from 11.2% in 2009. The corresponding OECD average percentage moved in the opposite direction, with 17.5% of females performing below Level 2 in 2018, compared with 13.1% in 2009.

Trends in high performance by gender provide favourable results for Ireland. In 2018, twice as many male students in Ireland (10.3%) performed at or above Level 5, compared with 2009 (4.5%). There was also an increase in the proportion of higher-achieving female students, from 9.5% in 2009 to 13.8% in 2018. There have only been small increases in the proportions of male students on average across OECD countries performing at or above Level 5, from 5.0% in 2009 to 7.1% in 2018 (a significant increase), and of female students, from 9.7% to 10.5% (a non-significant increase).

One important indicator of system equity is the percentages of variation in achievement that are between and within schools. The lower the between-school variation, the more similar schools are to one another. A second indicator is overall variation in achievement: the lower the total variation, the less difference there is between the high and low scores in a country. Ireland has very favourable results on these two indicators of system equity in PISA 2018. The total variation in reading achievement in Ireland on PISA 2018 was 84.3% of average total variation across OECD countries (OECD, 2019c). The proportion of variation in Ireland between schools (as a proportion of OECD average total variation) was 11.1%[1], with within-school variance at 73.1%. Only three entities in PISA 2018 (Iceland, Finland, and Baku (Azerbaijan)) had lower between-school variance compared with Ireland.

Looking at Ireland's overall performance on reading literacy in 2018, which is broadly similar to previous PISA cycles, with the exception of 2009, one might conclude that performance is stable, and therefore there is relatively little need to change existing practices. Further, it is worth noting that this relative stability in performance has occurred in the context of the transition to computer-based assessment for reading literacy (and other PISA domains), and hence reflects well on the education system and on students. Going forward, it would seem important that students continue to develop the skills required to engage successfully with digital texts, and that they have regular opportunities to apply such skills across a range of contexts, including subjects and projects. Some of the findings from the English teacher questionnaire, discussed later, provide further support for this.

SCHOOL, STUDENT AND PARENT VARIABLES ASSOCIATED WITH READING PERFORMANCE

A large number of the variables on which data were collected through the PISA context questionnaires in 2018 are significantly associated with student performance. The summary below highlights the characteristics that were statistically significant in a final model of PISA 2018 reading performance presented in this report. A purpose of the multi-level modelling is to identify those variables that are statistically significant, when other related variables are controlled for.

1 The estimate of between-school variance in the null model of reading (Chapter 7) was higher, at 17.2%, as it was calculated with reference to students in Ireland only, whose data contributed to the multi-level models of reading.

School socio-economic status

In the final model of reading, there was a 31.4 score-point (one third of a standard deviation) increase in reading performance associated with a standard deviation increase in school-level Economic, Social and Cultural Status (ESCS), while controlling for other variables in the model. A related variable, school DEIS status, did not remain in the final model of reading. This implies that variations in other explanatory variables (described below) explain the differences between DEIS and non-DEIS schools.

Student socio-demographic variables

Number of books in the home was statistically significant in the final model of reading performance.

Time spent in paid work, absence from school and risk of early school leaving also remained in the final model, over and above school ESCS. Students working more than 8 hours a week had a predicted reading score that was 19.6 points or a fifth of a standard deviation lower than students who did not work.

The final model also confirmed the contribution of absence from school to reading performance, though only the parameter estimates for students who were absent for 3-4 days (-25.0) and five or more days (-26.2) were significantly different from the reference group (no absences).

About 3% of students indicated an intent to leave school prior to completing the Leaving Certificate. In the final model, students at risk of early school leaving were expected to perform less well on average (by 36.1 score points) compared with students not deemed to be at risk.

PISA assesses 15-year old students in Second, Third, Transition and Fifth years. In the final model, students in Transition year had an expected reading score that was 19.4 score points higher than Third years, with no significant differences between Third-years and students in other year levels.

One demographic variable not included in the final model was students' immigrant/language status. The proportion of immigrant students speaking a language other than English/Irish at home more than doubled in size from 3.5% in 2009 to 8.8% in 2018 and this group was found to be more socio-economically disadvantaged than native students. In 2018, students in this group achieved a mean score on reading that was significantly lower than that of native students. The 'unadjusted' difference (23.6 score points) between these groups is accounted for by the other variables in the final model.

Teacher-related variables

The association between teacher-related variables and reading scores was weak when other variables associated with reading performance were controlled for. Several teacher-related variables (based on student responses to questionnaire items) were examined in the model of reading. These included teacher stimulations of reading engagement, teacher support in English lessons, teacher-directed instruction (the extent to which teachers structure instruction in ways that promote learning), adaptation of instruction by teachers in English classes and extent of feedback from teachers in English classes. Just two of

these remained in the final model of reading. The first is teacher-directed instruction, which had a negative relationship with achievement (-6.7 score points associated with a standard deviation increase on the scale). This could suggest that teachers may structure English classes to a greater extent for less-able readers. The second is teacher stimulation of reading engagement, which had a positive relationship with achievement (a 4.5 score point increase was associated with a standard deviation increase on the index). This second scale includes such activities as encouraging students to express their opinions about a text and showing them how information in texts builds on what they already know.

Parent variables

Several parent variables, such as parents' enjoyment of reading, parents' general support for learning, parents' emotional support for learning, parents' support for learning in early childhood (previous parental support for learning at home), and parents' involvement with their child's school were examined. In general, these variables had weak associations with student performance, and only one, parents' enjoyment of reading, was significant in the final model of reading performance. This is notable to the extent that students' own enjoyment of reading and the frequency with which they read for enjoyment were also significant in the final model. It may be that parents who read for enjoyment provide role models for students, though it is unclear if this has a direct effect at age 15, or if the impact occurs earlier during children's learning. This variable is also associated with students' socio-economic status (ESCS), with increased proportions of parents reporting that they read for enjoyment, as ESCS increased.

Student engagement with and attitudes towards reading

Among the student literacy-related variables that were significant in the final model of reading were students' frequency of reading for enjoyment, and enjoyment of reading. There has been a substantial and significant increase in the percentage of students in Ireland who do not read for enjoyment, from 41.9% in 2009 to 47.7% in 2018. In 2018, 56.1% of boys and 39.4% of girls reported that they did not read for enjoyment. These percentages are below the targets established in the Interim Review of the Literacy and Numeracy Strategy (60% reading for enjoyment on a daily basis by 2020, including 64% of girls and 52% of boys), though PISA 2018 data need to be interpreted with reference to a transition to digital reading among many students. The results of the model indicate that just a small amount of regular reading for enjoyment has a positive association with reading achievement. It should also be noted that, like parental reading for enjoyment, students' reading for enjoyment is associated with ESCS. Given the evidence that reading for enjoyment declines between primary and post-primary schooling and the consistent positive associations between reading for enjoyment and reading achievement across both primary and post-primary levels (Delaney et al., in press; Mullis et al., 2017), this is an area for sustained policy priority.

The PISA measure of enjoyment of reading was based on students' level of agreement with statements such as 'I only read if I have to' and 'I read only to get the information I need'. The mean score for students in Ireland on the resultant index was similar to the OECD average. A positive attitude to reading was significant in the final model of reading performance, though its association with reading was modest, with a five-point increment

in reading associated with a one-standard deviation increase in attitude to reading. Also, descriptively, there were large gaps in favour of female over male students, in favour of students with higher ESCS, compared to those with lower ESCS, and in favour of immigrant students over native students, in their attitudes to reading. Given the body of research that confirms the benefits of reading for enjoyment and fostering positive attitudes to reading (e.g., Howard, 2011; Wilkinson et al., 2020), a policy implication is further development of school-based reading for enjoyment programmes (e.g., Quinn & Somers, 2006) to support national literacy strategies and initiatives.

The index of self-perceptions of reading ability, which was significant in the final model of reading, comprises items such as 'I am a good reader', 'I can read fluently', and 'I can understand difficult texts'. In Ireland, 79.6% of students agreed with the latter statement, implying that 20% of students deem themselves to be poor readers. This is greater than the proportion performing below proficiency Level 2 in Ireland (11.8%). Given that there is a 19.2 point increment associated with a standard deviation increase in self-perceptions of reading ability when other variables are controlled for, it seems important to nurture students' reading self-concept, especially among at-risk readers, while also raising their achievement.

Another variable, perception of difficulty in reading, is negatively associated with reading performance. This variable was based on students' responses to statements such as 'I have always had difficulty with reading' and 'I find it difficult to answer questions about a text'. In Ireland 18.4% indicated that they always had difficulty with reading, further supporting the view that about one-in-five students perceive themselves to be poor readers. In the final model of reading, a one standard deviation increase on the perception of difficulty with reading scale was associated with an increment of -8.8 score points in reading. The research is unclear on whether students' reading self-concept increases as a result of improvement in reading performance, or whether it should be actively developed, alongside reading performance.

Students' reading strategies

As noted above, students in Ireland did relatively better on the reading processes of Locating Information and Reflecting and Evaluating, compared with Understanding (which includes integrating ideas and making inferences). Scope for improvement was noted for aspects of Reflecting and Evaluating digital texts, including Corroborating and Handling Conflict and Assessing Quality and Credibility, and as well as comprehending multiple sources texts.

PISA also asked students about their use of reading comprehension strategies, resulting in three scales reflecting the strategies of Understanding and Remembering, Summarising, and Assessing Credibility of Sources. Students in Ireland achieved mean scores that were above the corresponding OECD averages (mean = 0.0, SD = 1.0) on all three reading comprehension strategies scales: 0.06 on Understanding and Remembering, 0.14 on Summarising and 0.21 on Assessing Credibility of Sources. In the final model of reading, there were statistically significant parameters associated with each of the three scales, ranging from 4.4 score points (per standard deviation increase) on Understanding and Remembering, to 20.1 on Assessing Credibility of Sources.

Of some concern are the discrepancies in the three reading strategies scales across

important sub-groups. Male students, students in the bottom ESCS quartile, and students in Fifth-year were significantly less-likely than females, students in the top ESCS quartiles, and students in Third and Transition years to endorse strategies on the three scales. The student groups with the lowest average scores on the three indices are also those who do least well on overall reading literacy. Hence, the indices might be viewed as proxies for reading. However, the fact that they are significant in the final model, when other variables were controlled for, suggests that they should be taken into account when considering instructional programmes, alongside other important reading strategies not assessed directly in PISA (e.g., sequencing key ideas, identifying point of view, distinguishing between fact and opinion, classifying information as more and less important, identifying problems and solutions).

PISA 2018 asked students whether their English teachers asked them to implement specified strategies after reading, and what strategies they used online. As these questions were not scaled in the way described above, they were not considered for inclusion in the model of reading. However, they do point to some aspects of reading comprehension that seem to receive insufficient attention in teaching and learning. For example, just one third of students reported that their teachers ask them to compare the content of a book or chapter after they have read it with their own experiences, while less than 60% reported that they were asked to discuss a book or chapter they had read in a small group with other students. A similar proportion reported being asked to write a text related to what they had read. On the other hand, almost all students reported that their teachers asked them questions about what they had read, while nearly 90% reported that their teachers sought their personal views on what they had read, and a similar proportion said they were asked to write a summary.

Regarding online reading strategies, just 44.3% of students in Ireland reported that they had been taught how to use keywords when using a search engine, while 45.7% reported that they had been taught how to compare different web pages and decide which information is most relevant to their schoolwork. Despite the relatively high mean score of students in Ireland on the Assessing Credibility of Sources index described above, there would seem to be scope to further develop these skills, especially in light of the emphasis placed on such skills in the Junior Cycle Framework (DES, 2015) and the Junior Cycle English specification (NCCA, 2018). A key statement of learning in the former is for students to 'create, appreciate and critically interpret a wide range of texts' (p. 52), while a key aim of the latter is to support students 'to engage personally with and think critically about an increasingly broad range of spoken, written and multimodal texts' (p. 5).

The learning outcomes in the Junior Cycle English specification provide a basis for equipping all students with a broad range of text comprehension strategies, including strategies that support students in reflecting on their own understanding of texts (metacognitive knowledge). They can be supplemented by ideas from other sources that are designed to enhance teaching and learning of these skills (Brun-Mercer, 2019; Dobler & Eagleton, 2015; Harris, 2015).

TARGET SETTING AND PISA

A key element of the National Literacy and Numeracy Strategy involved setting targets designed to improve reading literacy across the education system. While the original (2011) target for students at Level 4 and above (an increase of 5%) had been achieved by 2012, when 37.4% performed at or above Level 4, compared with 28.9% in 2009, the target of reducing the proportion performing below Level 2 (8.5%) had not. In 2009, 17.2% performed below Level 2, and the proportion doing so in 2012 was 9.8%. The situation was broadly similar by PISA 2015, when 37.1% achieved Level 4 or higher (still 5% higher than in 2009), and 10.2% achieved below Level 2.

New targets based on PISA were issued in the Interim Strategy Review in 2017[2], with a target of 40% achieving Level 4 or above, and less than 8.5% achieving below Level 2 by 2020. Neither of these targets was achieved in 2018 (36.2% and 11.8% respectively). An additional target relating to higher achievers, set in 2017, referred to 12% performing at Levels 5-6 by 2020. This target was achieved by 2018, when 12.1% performed at these levels, compared with 10.7% in 2015.[3]

For the first time, the Interim Strategy Review also specified targets to be achieved by students in DEIS schools by 2020. A target of 26%[4] was set out for Level 4 and above. However, in PISA 2018, 21.2% performed at Level 4 or higher, compared with about the same proportion in 2015 (21.4%). The Interim Review also set a target of 18% for at or below Level 1. However, the proportions in DEIS schools performing at Level 1 or below were the same in 2015 and 2018 – 21.8% in both cases. Finally, the Interim Review set a target of 8% for Levels 5-6. In 2018, 5.5% in DEIS schools performed at these levels, compared with 4.7% in 2015.

As noted above, achievement of the current target for low achievers represents a particular challenge as the overall proportion of students performing below Level 2 in Ireland was among the lowest in countries participating in PISA 2018. However, more progress could be made in reducing the proportion of lower-achieving boys (currently at 15.7%). On the other hand, there is scope to increase the proportion of higher achievers, with several countries having higher proportions at Levels 5-6 in 2018, compared with Ireland.

In reviewing the appropriateness of establishing targets based on PISA in the future, it might be noted that PISA now assesses reading literacy on computer (i.e., digital reading), and, in doing so, taps into a set of reading skills that may be less relevant for the paper-based examinations that students in post-primary schools complete at Junior and Leaving Certificate levels at this time. Another challenge concerns the fact that individual schools do not know what proportions of their 15-year olds perform at different proficiency levels on PISA, and hence they cannot assess their own progress against the targets. This suggests that a measure such as a standardised test might be used by individual schools to monitor their progress. Indeed, the National Literacy and Numeracy Strategy suggested that standardised tests of English and mathematics would be administered to students in Second

2 There have been other iterations of PISA targets in the policy literature. For example, the Action Plan for Education 2016-19 (DES, 2016) set out slightly different targets to those set out in the Interim Strategy Review.

3 Although the percentage achieving at Levels 5-6 in 2018 (12.1%) may, on face value, seem larger than the percentage performing at Levels 5-6 in 2015 (10.7%), the two percentages may not be significantly different from one another, due to measurement and sampling error.

4 The DEIS targets in the Interim Review were adjusted by Gilleece, Neilis, Fitzgerald and Cosgrove (2020) to reflect an incorrect allocation of schools to DEIS when the original targets were set.

year (in a manner similar to what is currently done at primary level), but this proposal is still under consideration.

Gilleece et al. (2020) also noted a number of issues around the use of targets based on PISA for monitoring standards in DEIS schools. Their proposals also include the use of nationally-standardised tests to monitor performance at school level, and the establishment of relative rather than absolute targets at national level (as an example, they suggest cutting the ratio of students performing below Level 2 in non-DEIS and DEIS schools from the current level of 2.4 to 2.0).

A further issue with current targets, such as those in the Literacy and Numeracy Strategy, is that they do not take measurement and sampling error into account. Instead of referring to a specific target (such as 18% of students in DEIS schools reading at or below Level 1), it might be preferable to specify a range of percentages that includes the target (for example, between 16% and 20% reading at or below Level 1). Although less clear than an absolute percentage, this would convey the fact that percentages generated by PISA are estimates, around which confidence intervals can be built to take error into account.

OTHER POLICY INITIATIVES TO IMPROVE READING LITERACY

School principals and teachers reported on implementation of various initiatives (many of them outlined in the Literacy and Numeracy Strategy) designed to enhance literacy at school level, including initiatives to improve reading literacy in various subject areas. Very high rates of school self-evaluation, supports and planning in relation to literacy were reported by school principals. Upwards of 90% of students were in schools in which school principals reported that self-evaluation was undertaken in relation to the literacy (and numeracy) achievements of students, 96.0% were in schools in which English literacy is assessed at the start of Junior Cycle, and 94% attended schools with a clear plan on how to support students with additional learning needs to achieve their potential in literacy. Using assessment and evaluation to support better literacy learning was somewhat less widespread, with 81.4% reporting having a plan for improving the use of assessment and evaluation to support better learning in literacy.

It is also clear that many post-primary schools, particularly DEIS schools, have the infrastructure in place to further support the development of literacy and numeracy across subject areas, with 73.4% of students attending a school in which there is a literacy co-ordinator (83.8% of students in DEIS schools, and 70.1% in non-DEIS schools). A large proportion of students also attended schools within which there is a group of teachers appointed to co-ordinate and support literacy development.

Principal teachers were generally quite confident that teachers in subjects other than English had the relevant skills to help students develop and improve their literacy skills, with 96.5% of students in schools where the principal teacher agreed or strongly agreed with this. Two areas of relative weakness were identified. Just 71.1% of students were in schools that took the national targets in the Literacy and Numeracy strategy as they relate to PISA into account when deciding on school-level targets (perhaps confirming the relative distance

of PISA targets from ongoing teaching, learning and assessment in schools) and 64.4% of pupils were in schools where teachers worked with parents and the wider community to support students' literacy. These are areas that might be examined further to see if there is scope for development.

While it is clear from the responses provided by school principals that some attention in given to teaching literacy across subject areas, it is unclear how extensive this is and what impact it has had on performance.

Principals also had an opportunity to provide open comments on factors contributing to and hindering improvements to literacy in their schools. For factors contributing to the improvement of literacy, 52% of principals emphasised the importance of a school-wide approach and mentioned whole-school initiatives such as having a school action plan (24.3%) and conducting school self-evaluation in numeracy/literacy (19.3%). The positive effect of staff taking ownership of literacy enhancement was also cited by almost 59% of principals, with 19.2% mentioning teachers' acceptance and implementation of initiatives and 17.5% mentioning having a literacy team as enabling factors.

In their open comments on factors hindering the improvement of literacy in their schools, 40.1% of principals mentioned lack of time, while just 7.6% referred to lack of resources. Other negative factors included initiative overload (18.5%), students' over-engagement with social media technology (8.9%), a focus on Junior Cycle (arising from recent changes, including those relating to assessment) (8.3%) and lack of support from parents (7.0%). These issues are not necessarily specific to literacy per se, as initiative overload and time have been raised elsewhere (Rawdon et al., 2020; Cosgrove et al., 2019), suggesting that there is scope for coherence across initiatives, CPD and other improvement efforts at system and school level. These various issues need to be taken into account in considering how best to promote literacy across the curriculum in the future (see below). It is clear that literacy standards continue to be a matter of concern to schools, with over one quarter of students (31.0%) in schools where the principal is 'greatly concerned' or 'moderately concerned' about students' ability to access the curriculum due to low literacy skills (55.5% in DEIS schools, compared with 23.3% in non-DEIS schools).

Teachers of English who completed the national Teacher Questionnaire as part of PISA 2018 were also asked about aspects of the Literacy and Numeracy Strategy. Responses from teachers of English indicate moderate engagement in CPD relating to literacy across the curriculum, and high levels of confidence in supporting literacy skills development in general. Two fifths of respondents reported that they had completed some CPD in the previous two years on teaching English throughout the curriculum, and two fifths also reported that they had attended literacy link courses and cluster meetings. English teachers were generally confident in their understanding of literacy development, with over 90% agreeing or strongly agreeing that they understand how students develop basic literacy skills, and similar percentages agreeing or strongly agreeing that they understand the development of advanced literacy skills. However, while over 95% of English teachers reported that they had the skills to address the literacy needs of the majority of students in their classes, three in ten reported that they did not have the skills to address the literacy needs of students with special education needs. This is an area that might be examined further, taking into account the continuum of support for students with special education needs, and the ways in which

teachers of English can support best support students in receipt of supports for special needs (see, for example, DES/NEPS, n.d.).

Teachers of English also provided their views on the teaching of literacy across the curriculum in their schools. Almost 85% of teachers agreed or strongly agreed that there is a culture of sharing best practice on how to improve students' literacy at school level, while just over three-quarters agreed or strongly agreed that teaching staff in the school as a whole took an active and integrated approach to addressing the literacy needs of students. These proportions are high, suggesting that a good structure has been established in schools on which to build further work on literacy development.

Whereas over three-quarters of English teachers reported familiarity with the original Literacy and Numeracy Strategy, two in five had read the Interim Review. The Strategy may have faded from prominence to some extent as other initiatives such as the new assessments for Junior Cycle English came to the fore. A little over half of English teachers reported that they had often supported other teachers in their school to teach literacy skills in their subjects, almost 40% had participated in professional development that enabled them to support teachers of other subjects to teach literacy skills, and 64% of English teachers indicated that other subject teachers in the school are aware of the Strategy as it relates to their work on literacy. Hence, while awareness among all teachers of the literacy implications of the Strategy is generally good, there is scope for further involvement of English teachers in literacy-related initiatives at school level. Of some concern, given the implementation of the Digital Learning Framework (Cosgrove et al., 2019), is that only a little over half of English teachers (53.7%) reported that they had the skills required to teach digital literacy skills in English. This indicates a need to focus on professional development, tools and supports for the teaching and learning of digital literacy skills in the development of the new Strategy.

When asked about the areas of English in which students struggled the most, 18.3% of teachers reported that at least one in five Third-year students struggled with reading literacy. The corresponding proportions were greater for writing (26.6%) and listening (20.1%), while 14.4% of teachers indicated that at least one-in-five students had difficulties with aspects of speaking. In the case of DEIS schools, almost 40% of English teachers reported that 20% or more of Third-year students struggled with writing. These data suggest that supports provided to students across subject areas need to embrace writing as well as other aspects of communication.

TEACHING ENGLISH AT JUNIOR CYCLE

The PISA 2018 national English Teacher Questionnaire also gathered data on teachers' perceptions of the Junior Cycle English specification introduced in 2014, for first examination in 2017. In general, teachers held positive views about the specification, with 90% or more agreeing or strongly agreeing that they take an integrated approach to teaching oral language, reading and writing in their Junior Cycle classes, that discussion and debate often occur in their Junior Cycle classes, and that it is helpful that some outcomes in the curriculum specification are highlighted for First years. A lower percentage agreed there is continuity between the primary English language curriculum and the curriculum for First year students (67.6%) (though this may have changed since 2019, when implementation

of the new primary English language curriculum was effected at all primary class levels). A lower percentage of teachers also reported teaching a range of digital literacy skills to their Junior Cycle students (47.9%), though nearly three quarters of teachers (72.5%) agreed or strongly agreed that engaging students individually or in pairs with content on digital devices enhances student learning. Hence, responses indicate that continuity between the primary and post-primary curricula for English should be monitored, and that the teaching of digital literacy skills needs to be developed further.

When asked to compare the impact of the 2014 specification to its predecessor, positive impacts on oral language skills, formative feedback, range of texts and group work were commonly noted by teachers, with lower rates of impact found for self-management of learning, motivation, grammar, spelling, and parents' understanding of the revised specification. For example, between 70% and 85% agreed or strongly agreed that there has been an improvement in students' oral language skills, that students received more formative feedback during lessons, that students read and wrote a broader range of texts and genres, that students read and created more multi-modal texts during English classes, and that students engaged more often in working with groups. Aspects that did not improve to the same extent according to teachers (with 45% or fewer agreeing) were students' management of their own learning, levels of motivation during English class, grammar and spelling, and parents' understanding of the requirements of the specification and associated assessments. There were also relatively low levels of agreement on whether high-ability students are stretched to a greater extent than before (44.0%), and whether students for whom English is an additional language are learning more in English classes (40.9%). It is noteworthy that there is a perception among teachers that parents do not have a better understanding of the requirements of the specification and associated assessments, arising from the implementation of the new English specification. It was noted earlier that a relatively low percentage of students were in schools in which principal teachers reported collaboration between teachers and parents/the wider community to support students' literacy.

English teachers were also asked questions on assessment. Results indicated that some aspects of assessment, including use of standardised test results for planning and particularly the use of digital assessments in English classes, should be a focus of further guidance and development. Large majorities of English teachers (79-96%) agreed or strongly agreed that they develop and administer tests that are their own or are developed in collaboration with other teachers in their school, that they work with other teachers of English in their school to improve the assessment of English at Junior Cycle, and that SLAR meetings help their own understanding of assessment. In contrast, fewer teachers agreed that the Junior Cycle curriculum and assessments challenge the most-able students in their English classes (64.3%), that they use the results of standardised tests of reading to plan their teaching (50.0%) or that digital assessments contribute to planning and teaching of their Junior Cycle English classes (28.4%).

RECOMMENDATIONS

1. ***Overall reading literacy performance:*** There is evidence of strong and stable reading literacy performance on PISA since 2012, as well as specific findings that should be considered in order to further improve reading literacy standards. Specific strategies that are recommended are:
   - focusing more strongly on students' comprehension of digital texts, and, in particular, their ability to engage in such processes as Integrating Information and Generating Inferences; attention should also be paid to such skills as Corroborating and Handling Conflict and Assessing the Quality and Credibility of texts
   - placing a stronger focus on comprehending multiple-source texts in teaching, learning and assessment
   - encouraging more students at all ability levels to engage more frequently in reading a range of text types for enjoyment.
2. ***Gender differences:*** Although the overall gender gap in reading literacy achievement has narrowed in recent PISA cycles, attention should focus on policies and supports that are appropriately targeted at lower-achieving boys.
3. ***English language learners:*** Targeted supports should continue to be provided to immigrant students who are acquiring English language skills, taking into account their socio-economic and home-environment contexts.
4. ***Engagement in reading and enjoyment of reading:*** A sustained, focused strategy is needed to foster and promote enjoyment of reading and attitudes to reading, starting young, and appropriate to the evolving nature of reading development.
5. ***Development of reading skills and strategies:*** The development of teaching and learning approaches for effective reading strategies is recommended, using the learning outcomes in the Junior Cycle English specification as a basis, building in cross-curricular strategies, and tailoring instruction to various ability levels.
6. ***Target setting and PISA:*** The way in which PISA is used to set national literacy (and numeracy) targets should be revisited. Relative rather than absolute targets may be more appropriate. Different but coherent targets at system and school levels may be required. The lack of national standardised assessment data at post-primary level needs to be addressed. Targets that are not based on test scores (e.g., reading for enjoyment) should continue to be emphasised. There is scope for an increase in the proportion of higher-achieving students in Ireland.
7. ***Supporting literacy development across the curriculum:*** Any new strategy development should include a focus on literacy development across the curriculum (i.e., disciplinary literacy) and coherent linkages between and among digital and non-digital elements; attention should continue to be allocated to co-ordinated whole-school strategies for improving literacy skills, including establishment of a literacy team, having a school action plan for literacy, and conducting a school-level self-evaluation of literacy skills.
8. ***Teaching English at Junior Cycle***: Enhancements to the teaching and learning

of English at Junior Cycle should include an emphasis on student motivation, management of learning skills, grammar and spelling, parents' understanding of curriculum and assessment in English, and teachers' use of assessment outcomes, including those based on digital assessment. Specific aspects of assessment, including use of standardised test results for planning and particularly the use of digital assessments in English classes, should be a focus of further guidance and development.

Chapter 1 - Introduction

The Programme for International Student Assessment (PISA) is a project of the Organisation for Economic Co-operation and Development (OECD) that aims to assess how well students, at age 15, are prepared to meet the challenges they may encounter in future life, including education (OECD, 2019a). PISA has taken place every three years since 2000.[5] It has assessed students in the three core domains of reading literacy, mathematical literacy and scientific literacy (henceforth, reading literacy, mathematics and science), as well as in experimental domains such as problem solving. In each PISA cycle, one of the core domains is designated as the major assessment domain. In PISA 2018, reading literacy, the focus of this report, was the major assessment domain.

PISA 2018 is the third cycle in which reading literacy has been the major assessment domain. Reading literacy was also a major domain in 2000 and in 2009. The assessment of reading literacy in PISA 2018 is important for a number of reasons: It is the first cycle in which PISA reading literacy has been assessed as a major assessment domain since PISA transitioned from paper-based to computer-based assessment in 2015; it is the first cycle in which reading literacy has been a major assessment domain since 2009, when the OECD reported large and significant declines in the performance of students in Ireland in reading (and mathematics); and finally, PISA 2018 is the final opportunity to evaluate the performance of students in Ireland against targets established as part of the National Literacy and Numeracy Strategy 2011-20 (DES, 2011, 2017a), an initiative that was introduced in 2011 as a response to declines in the performance of students in Ireland in PISA 2009 and was reviewed in 2017. Hence, PISA 2018 allows for an in-depth consideration of the nature of reading literacy at post-primary level and progress in Ireland since 2009.

This chapter is divided into seven sections. First, an overview of PISA is given. Second, the evolution of reading literacy in PISA is described, with particular reference to the assessment framework for PISA 2018. Third, performance on reading literacy in Ireland in previous cycles of PISA is summarised, and research that seeks to explain why performance declined in 2009 is reviewed. Fourth, the policy context in which reading literacy was assessed in PISA 2018 in Ireland is outlined, including implementation of the National Literacy and Numeracy Strategy and recent curricular changes at Junior Cycle level. Fifth, the remaining chapters in this report are previewed. The sixth section describes the statistical analyses used in this report, and the final section comprises a short summary of this chapter.

It might be noted that the current report is one of a number of national reports that are based on PISA 2018. An initial national report on PISA 2018 (McKeown et al., 2019) was published to coincide with the release by the OECD of its initial reports on PISA 2018 (OECD, 2019c, 2019c). In autumn 2020, a report on the performance of students in DEIS schools on PISA 2018 was published (Gilleece, Nelis, Fitzgerald & Cosgrove, 2020). Unlike the current report, those reports focused on all three assessment domains (mathematics and science, in addition to reading literacy). Hence, the current report allows for a more in-depth analysis of performance on reading literacy in Ireland, in the context of performance in other countries on PISA as well as key national policy efforts.

5 Due to COVID-19, the eighth cycle of PISA will be implemented in 2022 rather than in 2021, as had been planned originally. Mathematics will be the major assessment domain.

1.1 AN OVERVIEW OF PISA

The primary goal of PISA is to assess 'the extent to which 15-year-old students near the end of their compulsory education have acquired the knowledge and skills that are essential for full participation in modern societies' (OECD, 2018, p. 3). Students' knowledge and skills are assessed through the cognitive tests, while information on attitudes, dispositions, strategic knowledge, study habits and expectations is gathered through questionnaires.

The first cycle of PISA was implemented in 2000, when reading literacy was the major assessment domain, and mathematics and science were minor domains. In 2000, 32 countries took part, including 28 OECD-member countries (a 29th, Turkey, did not take part until 2003). Students in 11 additional non-OECD countries completed the PISA 2000 assessment in 2001, bringing to 43 the total number of countries in the first cycle (OECD and UNESCO Institute of Statistics, 2003). The number of OECD countries participating in PISA has continued to increase with several countries acceding to the OECD since 2000, and more non-OECD ('partner') countries also taking part. In 2018, all 37 OECD countries and 42 partner countries/economies took part, giving a total of 79 participating entities (Table 1.1).

Table 1.1: Countries that participated in PISA 2018

OECD Member Countries		Partner Countries/Economies		
Australia	Korea, Republic of	Albania	Kazakhstan	Ukraine (PBA)
Austria	Latvia	Argentina (PBA)	Kosovo	United Arab Emirates
Belgium	Lithuania	Baku (Azerbaijan)	Lebanon (PBA)	Uruguay
Canada	Luxembourg	Belarus	Macao-China	Vietnam[6] (PBA)
Chile	Mexico	Bosnia and Herzegovina	Malaysia	
Columbia*	Netherlands	Brazil	Malta	
Czech Republic	New Zealand	Brunei Darussalam	Moldova (PBA)	
Denmark	Norway	Bulgaria	Montenegro	
Estonia	Poland	China (B-S-J-Z)**	Morocco	
Finland	Portugal	Chinese Taipei	Panama	
France	Slovak Republic	Costa Rica	Peru	
Germany	Slovenia	Croatia	Philippines	
Greece	Spain[7]	Cyprus	Qatar	
Hungary	Sweden	Dominican Republic	Romania (PBA)	
Iceland	Switzerland	Nth Macedonia (PBA)	Russian Federation	
Ireland	Turkey	Georgia	Saudi Arabia (PBA)	
Israel	United Kingdom	Hong Kong-China	Serbia	
Italy	United States	Indonesia	Singapore	
Japan		Jordan (PBA)	Thailand	

PBA: Paper-based assessment. All other countries including Ireland administered PISA on computer (CBA).

*Columbia was invited to become a full OECD member on 25th May 2019 and hence was considered to be an OECD country for reporting purposes; **Beijing-Shanghai-Jiangsu-Zhejiang.

6 Vietnam was removed from the international comparisons for reading, mathematics and science due to issues around data quality. Hence, data for 78 countries/economies appear on tables comparing achievement across participating countries.

7 Reporting on data for Spain's results on reading literacy was deferred by the OECD due to anomalies in student response behaviour (based on timing information) in the assessment of reading fluency. Therefore, data for 77 countries/economies appear on tables comparing achievement across countries for reading literacy.

The scope of PISA has also expanded over time. In 2000, in addition to tests in reading literacy, mathematics and science, school (principal) and student questionnaires were administered to obtain contextual information to aid the interpretation of PISA outcomes. In subsequent cycles, PISA introduced exploratory domains, such as problem solving and financial literacy. In 2018, alongside assessments in the three core domains, and optional assessments of global competency and financial literacy, there were school, student, parent and teacher questionnaires, as well as additional optional modules associated with the Student Questionnaire, including an ICT Questionnaire, an Educational Careers Questionnaire, and a Wellbeing Questionnaire. Ireland participated in all of these except the assessments of global competence and financial literacy, and the international Teacher Questionnaire (Ireland administered a national questionnaire to teachers of English rather than an OECD Teacher Questionnaire to teachers in general). The questionnaires administered in a particular cycle of PISA typically relate to the main domain assessed – reading literacy in 2018.

There have been other changes in PISA since 2000. The most notable of these has been the transition from paper-based assessment to computer-based assessment, which occurred in 2015 in Ireland and in most participating countries, and was continued in 2018, though a small number of countries still administer PISA on paper (see Table 1.1). Although cycles of PISA from 2006 onwards had introduced some computer-based assessment on an optional basis (for example, in PISA 2009, Ireland administered an assessment of digital reading in addition to the main paper-based assessment), in 2015, the OECD transferred tests previously administered on paper to computer, and constructed new items in science (the major assessment domain) that were intended to capitalise on the affordances of technology (for example, simulations in science). In PISA 2018, new items were developed for reading literacy (for example, items requiring students to search for and evaluate information on self-contained websites), while items formerly designed for and presented on paper were again presented in electronic format.[8]

Another development, introduced for the first time in PISA 2018, was computer-based adaptive testing, which was implemented for reading literacy only but will be extended to other assessment domains over time. Using Multi-Stage Adaptive Testing (MSAT), the reading assessment was designed to be adaptive to each student's level of ability; students started on a common set of items, and then, at intervals, progressed onto blocks of items of a lower or higher difficulty, based on their previous performance (see OECD, 2020). This is intended to achieve more precise estimates of student proficiency, while reducing the assessment burden on students, who are likely to encounter fewer passages and questions that are very difficult for them.

A further innovative feature of PISA 2018 was the introduction of computer-based scoring. This was mainly implemented with multiple-choice items, but was also used for some short-answer items, drawing on 'exact match' responses provided by students in PISA 2015 and in the PISA 2018 field trial (which was implemented in 2017). Computer-based

8 Side-by-side with changes in framework content (which has involved the revision of the assessment framework of the major domain assessed in each cycle), there have been changes and improvements to the way in which PISA achievement data are scaled, resulting in more stable measurement. Some of these, such as the application of a two-parameter logistic (2PL) item response theory (IRT) model for dichotomous data and a generalised partial-credit model for polytomous data, coincided with broader changes in assessment methodology more generally, while others, such as increases in the numbers of trend items used from cycle to cycle, the numbers of items used to assess minor assessment domains, the use of some country-specific item parameters in scaling the data, and the differential treatment of not-reached items, have arisen in an effort to address weaknesses observed in scaling in earlier PISA cycles, such as instability in estimated trends and gaps in construct coverage. These changes are detailed in the technical manuals for PISA (e.g., OECD, 2020).

scoring is intended to improve the reliability and efficiency of scoring, and reflects a broader development in assessment outside of PISA.

In Ireland, the PISA 2018 was administered in a representative sample of 157 post-primary schools, with all selected schools taking part. Within schools, up to 44 students aged 15 (those born in 2002) were selected to participate, with a total of 5,577 students doing so, yielding a weighted response rate of 86.5%. Students were spread over First/Second years (1.9% - weighted), Third year (61.6%), Transition year (27.9%) and Fifth year (8.5%). Among participating students, 49.8% were female, and 50.2% were male (weighted percentages). PISA was administered on laptops transported to schools by technical support personnel. Students spent two hours on the cognitive element of the assessment (the tests of reading literacy, mathematics and science, which were offered in various combinations) and one hour on the Student Questionnaire.

1.2 THE ASSESSMENT OF READING LITERACY IN PISA

The reading literacy framework for PISA was originally developed in preparation for PISA 2000, and was revised when reading literacy had major domain status in 2009 and 2018. Changes to the framework are typically reflected in the definition of reading literacy. Table 1.2 shows how reading literacy was defined in each cycle. The 2009 definition saw the addition of engagement to the definition. The 2018 definition refers to 'texts' rather than 'written texts', reflecting the transition to computer-based assessment in PISA, and to digital texts in life more generally.

Table 1.2: Definitions of reading literacy in PISA 2000, 2009 and 2018

PISA 2000	PISA 2009	PISA 2018
… understanding, using and reflecting on written texts, in order to achieve one's goals, to develop one's knowledge and potential, and to participate in society (OECD, 1999, p. 20)	…understanding, using, reflecting on and engaging with written texts, in order to achieve one's goals, to develop one's knowledge and potential, and to participate in society (OECD, 2009, p. 23)	... understanding, using, evaluating, reflecting on and engaging with texts in order to achieve one's goals, to develop one's knowledge and potential and to participate in society (OECD, 2019c, p.28).

The addition of engagement to the definition of reading literacy in 2009 recognises the key role that student engagement plays in acquiring and applying reading skills, manifested, for example, through an association between frequency of reading for enjoyment and reading performance in PISA 2000 (see Kirsch et al., 2001).

The reading processes referred to in the definitions are broadly similar across cycles. In 2018, the term 'evaluating' was added to the definition, perhaps in recognition of the importance of evaluating the source of digital texts, including websites. However, as per Table 1.3, which shows the reading literacy sub-processes reported on in PISA 2000, 2009 and 2018, evaluation of texts has been assessed in PISA from 2000 onwards, including those cycles when PISA was fully paper-based, though assessing the credibility of texts would not have played as prominent a role.

Table 1.3: Main reading literacy sub-processes reported on in PISA 2000, 2009 and 2018

PISA 2000	PISA 2009	PISA 2018
Retrieve	***Access and Retrieve***	***Locate Information***
(Retrieving information; Locating one or more pieces of information in a text)	(Retrieving information)	(Accessing and retrieving information with a text; Searching for and selecting relevant text)
Interpret	***Integrate and Interpret***	***Understand***
(Developing an interpretation; Constructing meaning and drawing inferences using information from one or more parts of the text)	(Forming a broad understanding, Developing an interpretation)	(Representing literal information; Integrating and generating inferences)
Reflect and Evaluate	***Reflect and Evaluate***	***Evaluate and Reflect***
(Reflecting on and evaluating the content and format of texts; relating texts to one's experience, knowledge and ideas)	(Reflecting on and evaluating content of text; Reflecting and evaluating form of text)	(Assessing quality and credibility; Reflecting on content and form; Detecting and handling conflict)
		**Read Fluently*

Source: OECD (1999, 2009, 2019a); *New for PISA 2018.

Texts in PISA reading literacy are also categorised according to whether they are single-source or multiple-source and performance is reported on separately for each of these text categories.

A new feature in the PISA 2018 reading literacy framework, and in the PISA assessment itself, is the assessment of reading fluency. Prior to answering the main PISA assessment, students were asked to read and to mark as many sentences as possible as 'true' or 'false' within 3 minutes. Although not reported on separately, this measure was designed to provide additional information on the proficiency of students at the lower end of the achievement distribution.

The PISA reading literacy framework also includes elements which are not reported on directly, but are used instead to ensure a good balance across texts and items. These include text format (continuous, non-continuous, mixed), text type (argumentative, descriptive, exposition, instructional, multiple, narrative and transactional), and text situation or context (educational, multiple, occupational, personal and public). Details on the distribution of items across elements of the PISA reading literacy framework can be found in Table 3.2 in McKeown et al. (2019).

The assessment framework for the questionnaires in PISA 2018 comprises 16 modules, two of which specifically refer to reading literacy: non-cognitive/metacognitive constructs including outcomes such as attitudes, motivations and use of strategies; and, among student background constructs, out-of-school reading experiences. In general, the constructs assessed in these modules (mainly via the Student Questionnaire) are similar to those examined in PISA 2009. However, in addition to assessing the value students place on strategies such as learning and remembering and summarising information, PISA 2018 also looked at students' use of strategies for assessing the credibility of information – something with increasing relevance in the context of digital reading. Items on students' dispositions focus more strongly than in earlier cycles on students' own perceptions of their reading

difficulties, while the module on out-of-school reading has a stronger focus than in 2009 on students' digital and online reading practices.

Table 1.4 lists the questionnaires administered in Ireland as part of PISA 2018. The 2018 cycle marked the second one (after 2015) in which the Parent Questionnaire was administered in Ireland. In all, 17 countries administered the Parent Questionnaire in 2018: Belgium (Flemish section), Brazil, Chile, Croatia, the Dominican Republic, Georgia, Germany, Hong Kong (China), Ireland, Italy, Korea, Luxembourg, Macao (China), Malta, Mexico, Panama and Portugal. Although PISA did have the option of an international teacher questionnaire (administered to teachers in all subject areas), a custom-made teacher questionnaire was completed by teachers of Junior Cycle English in Ireland, focusing specifically on the teaching and assessment of literacy (such a questionnaire was also administered to teachers of Junior Cycle English in PISA 2009).

Table 1.4: Questionnaires administered in PISA 2018 in Ireland

Questionnaire	Required by OECD?	Completed by. . .
School Questionnaire	Yes	School principals
Core Students' Questionnaire	Yes	Students
ICT Questionnaire	No	Students
Educational Careers' Questionnaire	No	Students
*Wellbeing Questionnaire	No	Students
Parent Questionnaire	No	Parents
Teacher Questionnaire	No	Teachers of English (Ireland only)

*Administered for the first time in PISA 2018

While the content of required and optional OECD questionnaires was determined by the OECD (in consultation with the PISA Governing Board), participating countries had the option of including some national questions. In the case of Ireland, these questions, which were agreed with members of the National Advisory Committee, focused on aspects of literacy. In the case of the School Questionnaire, for example, issues in the national questions included:

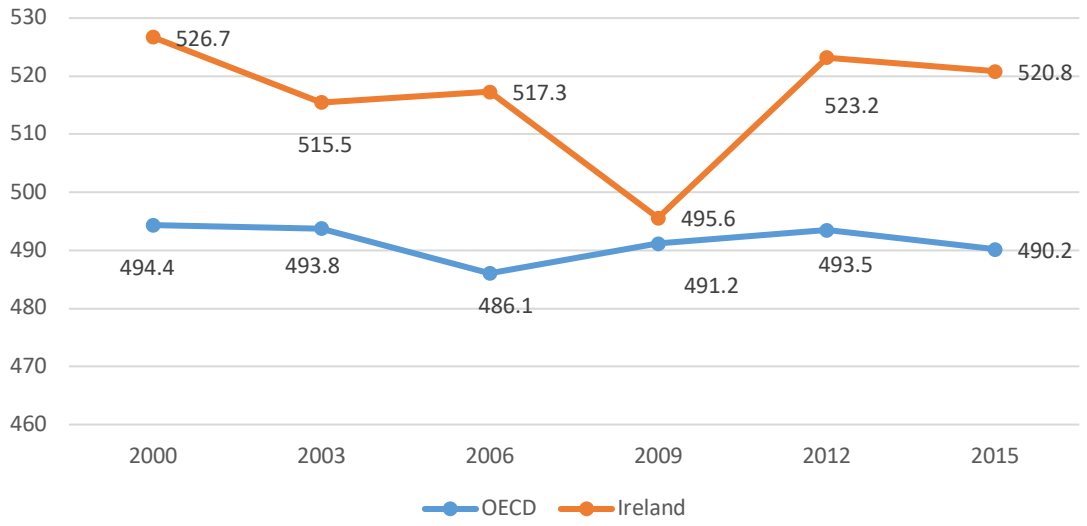
- Supports in place to implement aspects of the Literacy and Numeracy Strategy (e.g., assessment of students' literacy in First year)
- Factors hindering further improvements to literacy (and numeracy) in the school (open-ended)
- Extent to which principal teachers were concerned about literacy standards of students.

1.3 PERFORMANCE ON PISA READING LITERACY IN EARLIER ASSESSMENT CYCLES

Average performance on reading literacy in Ireland was significantly above the OECD average in each cycle prior to 2009, and in 2012 and 2015. The exception was 2009, when Ireland's mean score was not significantly different from the OECD average. Whereas Ireland's mean score in 2000 was 526.7, it was 495.6 in 2009 – a decline of 31.1 score points – or just under one third of the standard deviation for OECD countries – the largest

decline in performance across countries that participated in PISA in both 2000 and 2009. The next largest declines were 18.9 score points in Sweden, and 13.4 in both Australia and the Czech Republic (OECD, 2010b, Table V.2.1). The decline in performance in Ireland was also evident in a drop in ranking (from 5th to 17th among 38 countries with data for 2000 and 2009), an increase in the proportion of lower-achieving students, defined as those performing at Proficiency Level 1 or below on the PISA reading literacy scale (from 11.0% in 2000 to 14.2% in 2009), and a drop in the proportion of higher-achieving students, defined as those performing at Proficiency Levels 5-6 (from 17.2% to 7.0%) (OECD, 2010b, Table V.2.2). The performance of students in Ireland on reading literacy in PISA 2018 is of particular interest, since, as noted earlier, 2018 represents the first time that reading literacy is a major assessment domain in PISA since the decline in performance in 2009.

Figure 1.1: Performance on PISA reading literacy 2000-2015, for the OECD and Ireland



Note. Data for OECD average in 2000 is based on 23 countries, in 2003 on 29 countries, and in 2006 on 35 countries (excluding Austria and the United States); data for 2009-2015 is the OECD average of 35 countries (excluding Austria and Spain). Source: OECD 2019, Table I.B1.10.

The drop in average performance among male students in Ireland between 2000 and 2009 (36.5 score points) was greater than for females (26.0 points), though the difference between these differences is not statistically significant (OECD, 2010b, Table V.2.4).

Students in Ireland also had significantly lower performance in mathematics in PISA 2009, compared with 2003, the last cycle in which mathematics was a major assessment domain, prior to 2009. However, the drop of 15.7 scores points or one sixth of the OECD standard deviation for mathematics was considerably smaller than that for reading literacy. There was no difference in science performance between 2006 (when science was a major assessment domain) and 2009. Furthermore, on an experimental assessment of digital literacy, administered to a subset of students who took the main reading literacy assessment, Ireland's mean score was 508.9, which was significantly above the average of the 16 participating OECD countries, and ranked 8th among 19 countries taking part. Hence, students in Ireland performed relatively better on digital reading than on print reading in 2009.

Not surprisingly, there was interest in Ireland and internationally in examining why performance in print-based reading literacy (in particular) declined to such an extent in a relatively short period of time, given that there had been no systemic change in the Irish education system in the lead-up to PISA 2009. An investigation by Statistics Canada of the sample of students selected to sit PISA 2000 and 2009 in Ireland revealed that the samples were representative of the respective populations of students (La Roche & Cartwright, 2010), effectively ruling out the possibility that an atypical or unrepresentative sample was responsible for the declines in performance in 2009. In addition, the OECD (2011) confirmed that Ireland had met all relevant technical standards, as it had in earlier cycles of PISA, including 2000. Seven schools with very low performance in 2009 (100 score points below the national average) were found to have been selected in line with standard sampling procedures, and correct weights were found to have been computed.

La Roche and Cartwright also examined the scaling of PISA 2009, and, in particular, factors that could contribute to a decline in achievement. It was noted that:

- A relatively small number of items (28) was used to link reading performance across cycles, with individual students completing a small proportion of such link items, possibly giving rise to statistically unstable links across cycles.
- Decreases in student performance on an item-by-item basis for link items were accompanied by increasing proportions of missing responses and not-reached items in 2009, suggesting some level of disengagement among students in Ireland, compared with earlier cycles.
- Link error across cycles was found to be substantial, and greater in the case of Ireland, compared with PISA countries in general.
- Discrepancies were observed between expected and observed probabilities of answering items correctly at different levels of ability, and these discrepancies were higher in Ireland than across countries in general, suggesting some model misfit.

Subsequent analyses of the Irish PISA 2009 data followed up on some of the issues raised by La Roche and Cartwright. For example, Cosgrove (2011) examined variation in performance by item type, noting that, whereas students in Ireland achieved similar percent correct scores on Access and Retrieve items in both 2000 and 2009, they performed considerably less well on Interpret and Integrate items (of which there were more in 2009), and marginally less well on Reflect and Evaluate items. Interestingly, whereas performance was about the same among students in Ireland in 2000 and 2009 on constructed response items, it was found to be noticeably weaker on simple and complex (multi-part) multiple-choice items. Drawing on data from Cartwright (2011), Cosgrove also showed that countries with similar declines in percent correct scores on link items and new items between 2000 and 2009 (e.g., Sweden) had smaller declines in performance when their scaled PISA scores are considered, suggesting that the size of the decline in performance in Ireland may have been misrepresented by the PISA scaling model. Hence, while it is clear that there was a decline in performance in Ireland, it is likely to have been smaller than estimated by PISA. Related to this, Cosgrove (2011) concluded that PISA reading literacy is more sensitive to model specification than either mathematics or science.

Cosgrove and Cartwright (2014) examined student engagement in Ireland by comparing response patterns across cycles on the same sets of reading items, when they were presented in initial and final positions in test booklets. They observed large declines in percent correct scores when items appeared in the fourth or final quarter, with higher rates of students in Ireland skipping or failing to reach items rather than attempting items and answering them incorrectly. In practice, at the time, PISA counted both missing and not reached items as incorrect. Sachse, Mahler and Pohl (2019) also examined skipped and not reached items in the PISA 2009 reading literacy data for Ireland and showed that the assumptions underlying the treatment of such items in scaling PISA 2009 reading literacy data may have contributed to the large reported decline in performance. As noted above, this issue was addressed in part from PISA 2015 onwards, when not-reached items were treated as not administered, both in estimating item parameters and in scoring responses.

As shown in Figure 1.1 above, mean scores on reading literacy in Ireland were stronger in both 2012 and 2015, compared with 2009. The fact that Ireland's mean score returned to historic levels in 2012 suggests that the performance of students in Ireland on PISA 2009 was atypical. The relatively strong performance in 2015 also suggests that students in Ireland were not unduly penalised by the initial transition to computer-based testing, relative to their counterparts in other OECD countries.

1.4 THE POLICY CONTEXT OF PISA 2018 IN IRELAND

Following the declines in performance on PISA 2009 documented above, the (then) Department of Education and Skills issued a 10-year strategy aimed at improving standards among the general population of students, and among students deemed to be at risk. The National Strategy for Literacy and Numeracy 2011-2020 (DES, 2011) included targets for improved performance on literacy (and numeracy). In the case of post-primary schools, the targets related to national performance on PISA for both high- and low-achieving students. In a review of the Strategy (DES, 2017a), where it was acknowledged that most of the literacy targets had been achieved (given that performance on PISA had returned to historic levels), more challenging targets for students in general were put forward, as well as targets for students in DEIS schools, targets for male and female students relating to frequency of reading for enjoyment, and targets for parents relating to the frequency with which they discuss with their children how they are doing at school. These targets, and the progress that has been made towards achieving them, are outlined in Chapter 5 of this report. PISA 2018 presented a final opportunity to examine this progress as the Strategy came to an end in 2020. The current report also looks at actions taken by schools and teachers to support students' literacy development throughout the curriculum.

A number of additional policy initiatives are relevant to the literacy element of PISA 2018 including the implementation of a new curriculum specification for Junior Cycle English from September 2014, with the first final assessment in June 2017. Students in the First, Second, Third and Transition years, and students who had proceeded directly from Third year to Fifth year had experienced the new specifications prior to sitting PISA 2018, and their English teachers had been involved in implementing the curriculum, and in overseeing new assessment arrangements. Hence, the current report draws on data provided by students

in the Student Questionnaire, and by teachers in the national Teacher Questionnaire to examine aspects of implementation of the new specification for Junior Cycle English. The new specification for English is nested in the broader Framework for Junior Cycle (DES, 2015a) which identifies 'being literate' as one of eight key skills that are intended to permeate all subject areas. Other key skills include 'managing myself', 'managing information and thinking', 'communicating' and 'staying well'.

Another key policy initiative that may have particular relevance for PISA, given its transition to computer-based assessment, is the Digital Strategy for Schools 2015-2020 (DES, 2015b), which is currently being implemented in both primary and post-primary schools via the Digital Learning Framework (DES, 2017b). The PISA school, teacher and student questionnaires all included questions related to students' use of digital technologies at home and at school, and these are drawn on in this report in the context of examining the development of students' digital literacy skills. A separate thematic report on students' digital literacy strategies which draws on PISA 2018 is also being prepared by the Educational Research Centre (ERC) for publication later in this year. A revised Digital Strategy for Schools is currently being developed by the Department of Education.

Finally, as noted above, the ongoing implementation of the DEIS programme also provides a context for PISA 2018. While some reference is made to performance in DEIS schools in this report, with reference to targets set out in the National Literacy and Numeracy Strategy, a detailed report on performance on PISA in such schools was published by the ERC in the second half of 2020 (Gilleece et al., 2020), and a further report on contextual variables was published in 2021 (Nelis et al., 2021).

1.5 AN OVERVIEW OF THIS REPORT

In addition to this introductory chapter, this report comprises six further chapters. Chapter 2 summarises performance on reading literacy in PISA 2018, with reference to overall mean scores, mean scores on reading subscales, performance by proficiency level, gender differences in reading literacy, and changes in performance over time. It also provides information not presented elsewhere on how students in Ireland performed on clusters of items, such as trend items common to PISA 2015 and 2018.

In Chapter 3, the focus shifts to students' reading habits and attitudes. Variables based on student responses to the student questionnaire such as the frequency with which they read for enjoyment, the extent to which they enjoy reading, their online reading habits, and their perceptions of their reading ability are described. Where data have been summarised to form continuous variables, comparisons are drawn between males and females, between students in different socio-economic quartiles, between immigrant and non-immigrant students, and between students at different year levels. Relationships are also examined between scores on these variables and overall reading performance on PISA. Following this, the frequency with which students report using various reading strategies is examined. This is followed by analyses of students' perceptions of the extent to which they are supported by their teachers in English classes, the length of texts read in English lessons, the frequency of teacher-directed instruction in English classes, adaptation of English lessons by teachers, and strategies used by teachers to stimulate reading. These include general reading strategies

(e.g., understanding and remembering, summarising information, assessing the credibility of sources) and strategies that are used for online learning at school.

Chapter 4 relates to associations between home background variables and performance on reading literacy in PISA 2018, and, where comparable data are available, in earlier PISA cycles. The background variables that are examined include educational, social and cultural status, parents' occupations, parents' education, and material and cultural possessions in the home, including the number of books in the home. Following this, performance differences are examined for students with differing immigrant and language status, and for students who spend varying amounts of time on paid work or caring for others. The chapter also describes some variables drawn from the parent questionnaire administered in Ireland as part of PISA 2018, including the frequency with which parents read for enjoyment, parent support for learning, and parents' involvement in their children's learning. The final section examines associations between students' past and expected future participation in education and their reading performance, including their year level, whether or not they had attended pre-school, the frequency with which they are absent from school, and their own and their parents' expectations for educational attainment.

Chapter 5 has a policy focus. It examines the extent to which literacy targets established as part of the National Strategy for Literacy and Numeracy 2011-2020 have been achieved by students in schools in general, and by students in DEIS schools. The extent to which targets in the Strategy for students' frequency of reading for enjoyment, and for parents' support of students' learning have been achieved is also examined. Activities described at school level are designed to support implementation of the literacy elements of the Strategy (as reported by principals completing the School Questionnaire) including school self-evaluation, and the work of literacy co-ordinators and subject teachers. The chapter concludes by drawing on English teachers' activities related to the Strategy as described by teachers themselves (based on the national teacher questionnaire), including the work of literacy link teachers, CPD related to literacy that was availed of by the teachers, and collaboration among teachers on teaching literacy.

The focus of Chapter 6 is also on teachers of English, with particular emphasis on teaching, learning and assessment at Junior-Cycle level. First, teacher background, professional development activities, and allocation to time to English classes are considered. Following this, the nature of materials used in English classes, the use of digital devices by students in English classes (as reported by their teachers) and teachers' perceptions of the extent of students' difficulties in different aspects of communication in English are considered. This is followed by a section on teachers' implementation of the 2014 Junior Cycle English specification and associated assessment activities.

Whereas most of the data presented in Chapters 2-6 are based on analysis of descriptive statistics, Chapter 7 describes multi-level models of reading based on PISA 2018. The models allow for a consideration of the contribution of key variables driving student performance on reading literacy at school and student levels, while controlling for the effects of other variables. The chapter includes a comparison with similar models developed for print and digital literacy in PISA 2009.

Chapter 8, the final chapter, provides a summary of the main findings, with conclusions and recommendations arising from the analyses described in previous chapters.

1.6 HOW THE DATA WERE ANALYSED

The data and statistics that were used to compile the current report are described in this section. Some of the data in Chapter 2 (mean scores on reading literacy scales in Ireland and on average across OECD countries) were taken from the national and international reports on PISA 2018 (e.g., McKeown et al., 2019; OECD, 2019a) and were also verified using the publicly available PISA 2018 international database. Reading scores such as the mean score for Ireland on overall reading literacy were generated with reference to plausible values, as each student taking the PISA tests is assigned 10 plausible values (estimated scores) based on their performance. The analysis of percent correct scores (P+ scores) in Chapter 2 is based on data provided by the OECD to individual PISA countries (Ireland did not have access to the data for other countries, although OECD averages were available). Where relevant, the P+ scores have been adjusted (equated) by the OECD to take multi-stage adaptive testing into account (since non-random groups of varying ability took individual items) and are comparable with percent correct scores generated in earlier (paper-based) cycles of PISA (see OECD, 2020, Chapter 9).

Data for Chapters 3-7 were generated using the PISA datafile for Ireland and the international datafile, both of which include data from all international questionnaires, and can be downloaded from the OECD website. National variables were added to the datafile for Ireland (for example, data based on the additional questions added to the school and student questionnaires, and variables such as DEIS status). In the case of teachers, the PISA teacher questionnaire data were analysed separately from the main school/student datafile.

Mean scores, percentages and their standard errors were computed in Chapters 3-6 using specialised software (IEA, 2019), with standard errors calculated to reflect the fact that students in PISA are nested within schools (and hence are not selected on the basis of a simple random sample). When mean scores were compared, standard errors of the difference were also computed within the IDB Analyzer, while alpha levels were adjusted to take into account the numbers of comparisons made (for example, if two groups were compared against a reference group, the required alpha level of significance was 0.25 (0.5/2)). In these chapters, groups that were compared within a cycle (for example, males and females in PISA 2018) were treated as dependent samples (requiring a further adjustment in the IDB Analyzer), while groups that were compared across years (for example, students with engagement in reading scores in 2009 and 2018) were treated as independent samples.

Correlation coefficients were also computed between continuous variables in these chapters (for example, between engagement in reading and overall reading achievement). A negative correlation (e.g., -.26) means that as one variable increases, the other decreases; a positive correlation (e.g., .26) means that both either increase or decrease together. In this report, correlations are considered *strong* if $r > \pm .56$, *moderate-to-strong* if in the range $r \pm .41$ to $r \pm .55$, *moderate* if from $r \pm .26$ to $r \pm .40$, *weak-to-moderate* if from $r = \pm .11$ to $r = \pm .25$, and *weak* if $< r \pm .10$. It might be noted that correlation does not imply causation as some third variable may be responsible for an observed relationship.

PISA student sampling weights in the OECD datafiles were used to weight data for most of the analyses in Chapters 2-6. As the teacher questionnaire is a national instrument,

teacher weights were computed nationally based on the final school weights from the PISA national datafile, adjusted for teacher non-response within schools (it was not possible to link teachers to students). Since the teacher data have been weighted, they can be viewed as being indicative of national figures, though it was not possible to compare differences between mean scores or percentages.

A different approach to analysis was implemented in Chapter 7, where many of the variables described in Chapters 3-6 were used in constructing two-level (school, student) multilevel models of reading in PISA 2018. Model building was conducted using MPlus (Version 8) software (Muthén & Muthén, 2017) which allows for the separation of variance attributable to differences between schools, and, in this instance, to differences within schools. This approach allows us to examine individual variables and clusters of variables, and interactions between variables, while holding other variables in the models constant.

1.7 SUMMARY

Chapter 1 of this report provided a broad background for further detailed analyses of the performance of students in Ireland on reading literacy and related variables in PISA 2018. The current report builds on the initial national report, which also included data on mathematics and science (McKeown et al. 2019). It is important in that it is the first detailed analysis of performance on reading literacy among 15-year olds in Ireland, following a large and significant decline in PISA 2009, when, as in 2018, reading literacy was the major assessment domain in PISA. It is also important as 2018 represents the first cycle of PISA in which reading literacy is a major assessment domain since the transition to computer-based testing.

The chapter included an overview of the PISA 2018 framework for reading literacy that also looked at the evolution of reading literacy in PISA across cycles. The overview included a particular focus on how the assessment of reading literacy in PISA has changed, mainly to accommodate computer-based assessment. The questionnaires implemented in Ireland as part of PISA 2018 were also described briefly, including a national questionnaire for teachers of Junior Cycle English.

A review of achievement on reading literacy in PISA between 2000 and 2015 showed that performance has been remarkably stable over time, with the exception of 2009. Research on the reasons underlying the decline indicate that, while students in Ireland did indeed perform less well in 2009 than in earlier cycles, the size of the decline is likely to have been exaggerated, due to aspects of the PISA scaling model, including, for example, the treatment of not reached items as incorrect. Some of these issues have been addressed since 2009, with a much larger number of trend items presented to students from cycle to cycle, and changes in the way in which not reached items are treated.

This chapter also examined the policy context in which PISA 2018 was implemented. The relevance of the report was outlined, with reference to both the final years of the National Literacy and Numeracy Strategy (2011-20), and the implementation of recent changes to Junior Cycle English.

The final section provided an overview of the report on a chapter-by-chapter basis, and described some of the procedures used to conduct the analyses reported in those chapters.

Chapter 2 – Performance on PISA Reading Literacy 2000-2018

This chapter summarises the performance of students in Ireland on reading literacy in PISA 2018 and compares it with average performance across OECD countries. It also provides an overview of student performance on PISA reading literacy in Ireland over the period 2000-2018. Finally, it provides an analysis of percent correct scores on reading literacy in Ireland in recent cycles. Other analyses of the performance of students in Ireland on reading literacy in PISA 2018 can be found in McKeown et al. (2019).

2.1 OVERALL PERFORMANCE ON READING LITERACY

As reported in McKeown et al. (2019), students in Ireland achieved a mean score of 518.1 on the PISA 2018 overall reading scale, which is significantly higher than the OECD average of 487.1 (Table 2.1). Three countries had significantly higher average performance than Ireland (marked ▲ in Table 2.1), while Ireland's mean score did not differ significantly from those of 6 countries (marked ● in the table). Sixty-seven countries (including 30 OECD countries) had mean scores significantly below Ireland's (marked ▼ in the table).

Table 2.1. Mean country scores and ranks for overall reading literacy in PISA 2018

Above OECD Average			Not Significantly Different from the OECD average			Below OECD Average		
	Mean	IRL		Mean	IRL		Mean	IRL
B-S-J-Z (China)	555.2	▲	Portugal	491.8	▼	*Croatia*	479.0	▼
Singapore	549.5	▲	Czech Republic	490.2	▼	Latvia	478.7	▼
Macao (China)	525.1	▲	Netherlands	484.8	▼	*Russian Federation*	478.5	▼
Hong Kong (China)	524.3	●	Austria	484.4	▼	Italy	476.3	▼
Estonia	523.0	●	Switzerland	483.9	▼	Hungary	476.0	▼
Canada	520.1	●				Lithuania	475.9	▼
Finland	520.1	●				Iceland	474.0	▼
Ireland	518.1					*Belarus*	473.8	▼
Korea	514.1	●				Israel	470.4	▼
Poland	511.9	●				Luxembourg	470.0	▼
Sweden	505.8	▼				*Ukraine*	466.0	▼
New Zealand	505.7	▼				Turkey	465.6	▼
United States	505.4	▼				Slovak Republic	458.0	▼
United Kingdom	503.9	▼				Greece	457.4	▼
Japan	503.9	▼				Chile	452.3	▼
Australia	502.6	▼				*Malta*	448.2	▼
Chinese Taipei	502.6	▼				*Serbia*	439.5	▼
Denmark	501.1	▼				*United Arab Emirates*	431.8	▼
Norway	499.5	▼				Romania	427.7	▼
Germany	498.3	▼				*Uruguay*	427.1	▼
Slovenia	495.3	▼				*Costa Rica*	426.5	▼
Belgium	492.9	▼						
France	492.6	▼	OECD AVG-36a	487.1	▼	+ 28 other countries		

▲ Score significantly above Ireland's

● Score not significantly different from Ireland's

▼ Score significantly below Ireland's

*Non-OECD countries are in italics

OECD AVG-36a is used for Reading data: arithmetic mean for 36 of 37 OECD countries (excluding Spain).

Reporting on reading literacy data for Spain was deferred until sub-optimal response patterns have been investigated.

Data for Vietnam were excluded as they had not been fully validated for international comparability.

2.1.1 Performance on Reading Subscales (reading performance by cognitive process and by number of text sources)

Five reading subscales were established in the PISA 2018 reading literacy assessment based on item-and passage-type. Three of these subscales entail assessment of cognitive processes (Locating Information; Understanding; Evaluating and Reflecting). A further two subscales assess reading performance according to whether items related to reading Single Source or Multiple Source texts. As reported by the OECD (2019b, Table I.5.3), students in Ireland were relatively stronger on both Locating Information and Evaluating and Reflecting than on Understanding. Ireland's mean score was significantly higher than the corresponding OECD average on each reading process subscale, with differences of 33.5 points on Locating Information, 23.6 points on Understanding, and 30.0 points on Evaluating and Reflecting. Performance in Ireland was also significantly higher than the OECD average on the Single Source text scale, by 27.5 score points, and on Multiple Source texts, by 26.5 (OECD 2019b, Tables I.B1.21, I.B1.22, I.B1.23).

2.1.2 Performance on Reading Proficiency Levels

In PISA, test item difficulties and students' scores are placed on the same scale. As a result, students' scores can be grouped into proficiency levels and the skills of students at these levels can be described (see McKeown et al., 2019, Table 3.7). In PISA 2009, 2012 and 2015 reading literacy, seven levels were included, ranging from Level 1b (lowest) to Level 6 (highest). In PISA 2018, the OECD also added some items with a lower difficulty level than in previous cycles to facilitate the inclusion of a descriptor of proficiency below Level 1b called Level 1c. This level is designated as the lowest level of proficiency for reading, with a cut-point score of 189, while the highest proficiency level, Level 6, has a cut-point score of 698 (see Table 2.2).

In PISA 2018, Ireland had significantly more higher-achieving (level 5 and above) students (12.1%) than the average for OECD countries (8.7%). About 11.8% of students in Ireland (compared to an OECD average of 22.6%) performed below Level 2, that is, below the level considered by the OECD to be the minimum needed to participate effectively in society and future learning (Table 2.2).

Table 2.2: Proficiency levels on the PISA 2018 reading scale, and percentages of students achieving each level (Ireland and OECD average)

Level (Cut-point)		Ireland		OECD	
		%	SE	%	SE
6	*(698 and above)*	1.8	(0.3)	1.3	(0.0)
5	*(626 to less than 698)*	10.3	(0.6)	7.4	(0.1)
4	*(553 to less than 626)*	24.1	(0.8)	18.9	(0.1)
3	*(480 to less than 553)*	30.3	(0.9)	26.0	(0.1)
2	*(407 to less than 480)*	21.7	(0.8)	23.7	(0.1)
1a	*(335 to less than 407)*	9.5	(0.6)	15.0	(0.1)
1b	(262 to less than 335)	2.1	(0.3)	6.2	(0.1)
1c	(189 to less than 262)	0.2	(0.1)	1.4	(0.0)
Below 1c	(less than 189)	0.0	(0.0)	0.1	(0.0)

For a full description of each level see McKeown et al. (2019), Table 3.7; OECD (2019b), Table I.B1.1. Levels 5-6 (high achievers) and Level 1 and below (low achievers) are shaded.

2.1.3 Gender Differences in Reading

In Ireland, female students achieved a mean score that was 23.2 points higher than male students on PISA 2018 overall literacy (529.6 and 506.4 respectively); on average across OECD countries, the gender difference in favour of female students was higher at 29.7 points. Approximately 15% of male students in Ireland, compared to 8.5% of female students, achieved a mean score which is below Level 2. On the other hand, 10.4% of females in Ireland are considered highly skilled readers (Level 5 or above), compared to just 7.1% of males.

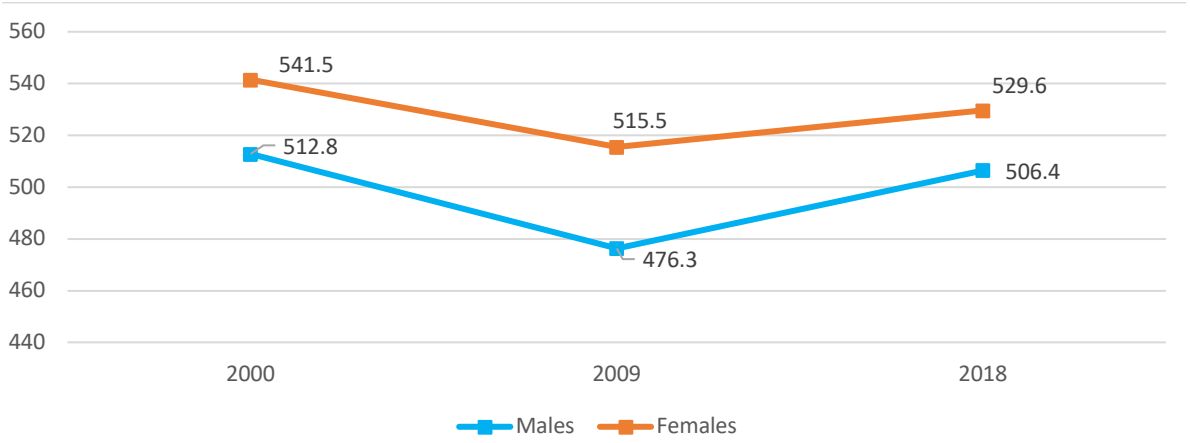
Female students in Ireland significantly outperformed male students on all five reading literacy subscales. Score-point differences in favour of females ranged from 18.7 points for Evaluating and Reflecting to 26.2 points for Single Source texts.

2.2 CHANGES IN READING PERFORMANCE OVER TIME

Looking at changes in reading performance over time, performance on reading literacy in 2018 can be most reliably compared to 2009 and 2000 when reading literacy was also assessed as a major domain in PISA. In 2000, Ireland's mean reading score was 524.3, which was significantly above the OECD average of 497.6. Ireland's performance in reading dropped by 31 points from 2000 to 2009 which was the largest decline among all countries that had valid data for both cycles. Since 2009, Ireland's performance in reading returned to the levels achieved prior to 2009. Overall reading performance in Ireland increased by 22.4 points from 2009 to 2018, from 495.6 in 2009 when Ireland was not significantly different from the OECD average of 495.6, to 518.1 in 2018. Ireland's performance in PISA 2018 needs to be interpreted with reference to possible reasons underlying the decline in 2009 and changes to PISA reading literacy since then, including the introduction of computer-based assessment (see Chapter 1).

Female students in Ireland achieved a mean score in 2018 that was 14.1 score points higher than in 2009 and 11.9 score points lower than in 2000 (Figure 2.1). Male students achieved a mean score in 2018 that was 30.1 score points higher than in 2009 and 6.4 points lower than in 2000. There was a large and significant difference in favour of female students in 2000, 2009 and 2018, with the largest gender difference in reading performance in 2009 (39.2 score points). The 2018 cycle saw a reduced gender gap of 23.2 score points, a small reduction compared with the 2000 gender gap of 28.7 points. On average across OECD countries (based on 35 countries), the gender gap reduced from 39.3 in 2009 to 29.7 in 2018[9] (OECD 2019c, Tables II.B1.7.1, II.B1.7.28). Hence, the gender difference in Ireland in PISA 2018 was marginally lower than on average across OECD countries in that year.

Figure 2.1: Mean scores on the overall reading literacy scale by gender in 2000, 2009 and 2018



Source: OECD 2019c, Table II.B1.7.1, II.B1.7.28; Shiel et al. (2001)

2.2.1 Trends in Reading Performance by Proficiency Levels

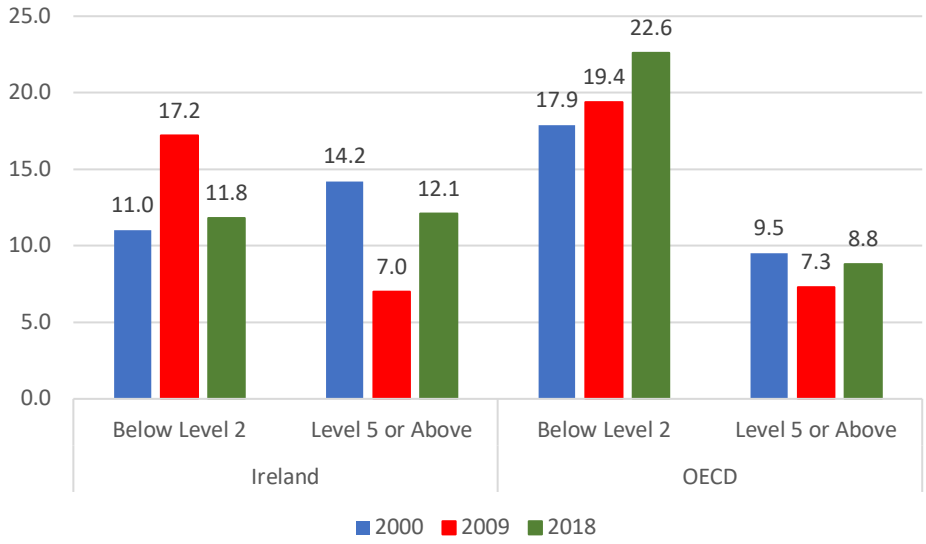
The percentages of students below Level 2 was 11.0% in 2000; it increased significantly (by 6.2 percentage points) to 17.2% in 2009 before decreasing significantly (by 5.4 percentage

9 The gender difference in Ireland in 2015 was 12.0 score points in favour of females, and the OECD average difference was 26.9 score points, also in favour of females.

points) to 11.8% in 2018 (Figure 2.2). In each of these years, the percentage was below the corresponding OECD average (17.9% in 2000, 19.4% in 2009 and 22.6% in 2018), which has been increasing incrementally over time.

There are also differences from 2000 to 2018 in the proportions of students at or above Level 5. The highest proportion was reported in 2000 (14.2%) when Ireland was 4.8 percentage points higher than the average across OECD countries (9.4%). As with the overall trend in performance in 2009, the proportion of students at or above Level 5 fell to 7.0% but increased to 12.1% in 2018. On average across OECD countries, a significantly higher percentage (8.8%) also performed at or above Level 5 in 2018 than in 2009 (7.3%) (OECD 2019b, Table I.B1.7).

Figure 2.2. Percentage of students in Ireland performing below Level 2 and at or above Level 5 in reading, PISA 2000, 2009 and 2018



Source: OECD 2019b, Tables I.B.7; Shiel et al. (2001)

Table 2.3 presents the trend in proficiency levels between 2000 and 2018 by gender in Ireland. There were fewer male students performing below Level 2 in 2018 (15.1%) compared with 2009 (23.1%). From 2000-2009 the percentage increased significantly (by 9.6%) but this was somewhat reversed in 2018 when the proportion decreased significantly by 8 percentage points. A similar proportion of females performed below Level 2 in 2000 (8.3%) and 2018 (8.5%) while in 2009, the proportion was significantly higher (11.2%). On average across OECD countries, 25.7% of boys performed below Level 2 in 2009, while 27.7% did so in 2018. The difference, though small, is statistically significant. In 2018, 17.5% of females performed below Level 2, significantly increasing from 13.1% of females in 2009 (OECD 2019c, Tables II.B.1.7.27, II.B.1.7.28, II.B.1.7.29, II.B.1.7.30).

In 2018, twice as many male students in Ireland (10.3%) performed at or above Level 5, compared with 2009 (4.5%). The difference, 5.8 percentage points, is statistically significant. There was also a statistically significant increase of 4 percentage points in the proportions of female students who performed at or above Level 5 in 2018 when compared to 2009; however, there is a significant decrease comparing 2018 to 2000 (13.8% and 17.4% respectively). On average across OECD countries, 5.0% of boys performed at or above Level 5 in 2009 and

this increased significantly to 7.1% in 2018. In 2009, 9.7% of girls performed at or above Level 5, and there was a non-significant increase to 10.5% by 2018 (OECD 2019c, Tables II.B.1.7.27, II.B.1.7.28, II.B.1.7.29, II.B.1.7.30). Changes in the proportions of students performing below Level 2 and at or above Level 5 should be interpreted with reference to the changes in Ireland's mean scores on overall reading literacy between 2000 and 2018 (see above).

Table 2.3: Percentages of male and female students below proficiency level 2 and at or above proficiency level 5 on the print reading scale, 2000-2018, Ireland

	Below Level 2				At or above Level 5			
	Male		Female		Male		Female	
	%	SE	%	SE	%	SE	%	SE
2000	13.5	(1.3)	8.3	(1.1)	11.2	(1.1)	17.4	(1.2)
2009	23.1	(1.7)	11.2	(1.0)	4.5	(0.6)	9.5	(0.9)
2018	15.1	(1.0)	8.5	(0.7)	10.3	(0.9)	13.8	(0.8)
	Diff	SED	Diff	SED	Diff	SED	Diff	SED
2018-2009	**-8.0**	(2.0)	**-2.7**	(1.2)	**5.8**	(1.1)	**4.3**	(1.2)
2018-2000	1.6	(1.6)	0.2	(1.3)	-0.9	(1.4)	**-3.6**	(1.4)

Source: OECD (2019b), Table I.B1.1, Perkins et al. (2012), E-appendix Table A7.20.

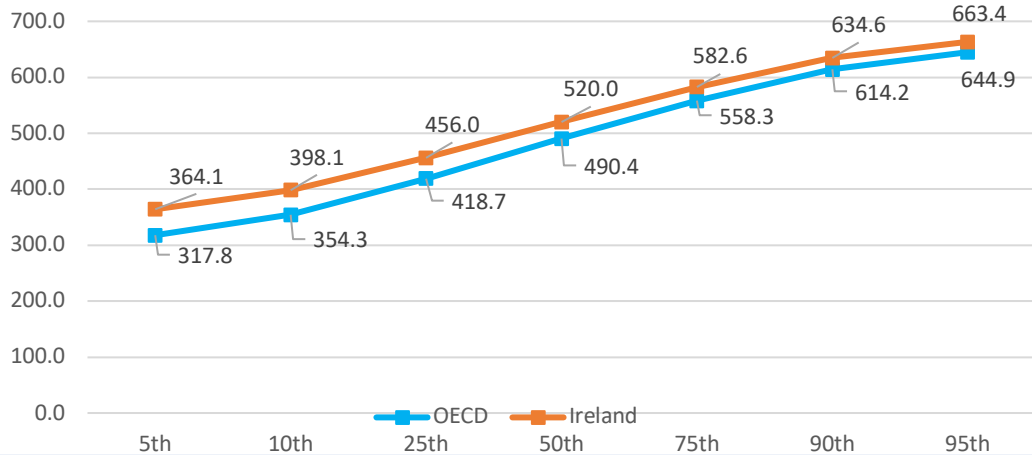
Significant differences within genders in **bold**.

2.2.2 Trends in Performance at Key Percentiles

Using key percentile markers, it is possible to examine the spread of reading achievement scores. The 10th percentile is the point on the scale below which 10% of students score. In other words, if all students were ranked from lowest- to highest-scoring, the 10th percentile would be the score achieved by the highest-scoring of the lowest-performing 10% of students. Likewise, the 90th percentile is the point on the scale below which 90% of students score (or, conversely, above which only 10% of students score). The score achieved by students in Ireland on overall reading literacy in PISA 2018 at each key percentile rank was above the corresponding OECD average (Figure 2.3). In Ireland, the score at the 90th percentile was 634.6, which was 20.4 points above the OECD average.[10] The difference in performance between Ireland and the OECD average was greater at the 10th percentile at 43.8 points.

10 The 90th percent for Ireland is a discrete point on the distribution, while for the OECD it is the average of the discrete country points.

Figure 2.3. Mean reading scores at key percentile markers in 2018 in Ireland and on average across OECD countries



Source OECD, 2019b, Table I.B1.4

Between 2009 and 2018, the reading scores at the 10th and 90th percentiles in Ireland increased (Table 2.4), in line with the increase in average performance. High-achieving students (at the 90th percentile) increased their score by 24 points from 610.6 in 2009 to 634.6 in 2018. There was a similar pattern at the lower end of the achievement distribution (10th percentile) as the score increased from 373.4 in 2009 to 391.8 in 2018 (a 24.7 point difference). Changes in the dispersion of the distribution – widening, narrowing or no change – are measured by the inter-decile range, or the difference in score points between the 90th percentile and the 10th percentile on the student-performance distribution. While the OECD (2019c) notes that there is a widening of the distribution of reading achievement scores between 2015 and 2018 in Ireland (a score difference of 222.2 in 2015 compared to 236.4 in 2018), the overall distribution in 2018 is in line with the first cycle of PISA (there was a score difference of 239.8 in 2000) (Table 2.4).

Table 2.4: Variation in reading literacy in Ireland, 2000-2018

	10th percentile		**90th percentile**		**Inter-decile range (90th minus 10th percentile)**	
	Score	SE	Score	SE	Score diff.	SED
2000	401.3	(6.4)	641.1	(4.0)	239.8	(7.6)
2003	401.3	(4.6)	622.1	(3.0)	220.9	(5.5)
2006	395.3	(5.5)	632.7	(3.5)	237.3	(6.5)
2009	373.4	(4.7)	610.5	(2.8)	237.1	(5.4)
2012	410.2	(5.7)	631.5	(3.2)	221.2	(6.5)
2015	406.4	(4.1)	628.6	(2.8)	222.2	(5.0)
2018	398.1	(3.5)	634.6	(2.8)	236.4	(4.5)
	Score diff.	SED	Score diff.	SED		
2018-2000	-3.2	(7.3)	-6.6	(4.9)		
2018-2003	-3.2	(5.8)	12.4	(4.1)		
2018-2006	2.8	(6.6)	1.9	(4.5)		
2018-2009	**24.7**	(5.9)	**24.0**	(4.0)		
2018-2012	-12.1	(6.7)	3.1	(4.2)		
2018-2015	-8.3	(5.4)	5.9	(4.0)		

Significant differences in **bold**.

2.3 PERCENT CORRECT ANALYSES FOR READING LITERACY IN IRELAND

This section examines trends in performance on clusters (groups) of reading questions (items). The results for Ireland are compared to the respective OECD averages. The reading items are classified into 'old' or 'trend' (i.e. used in previous PISA cycles) and 'new' (i.e. used for the first time in PISA 2018). Comparisons are made for percent correct performance overall and also by reading processes and text types. The percent correct (described as 'P+' in PISA) is reported here for the varying item clusters. The percent correct can be considered as an indicator of item difficulty.

The PISA 2018 reading test item pool comprised 244 test items in total, consisting of 172 new items administered for the first time in 2018 and 72 trend items, previously administered as follows:

- 43 trend items administered in 2009, 2012, 2015 and 2018
- 26 trend items administered in 2009 and 2018 only
- 3 trend items administered in 2015 and 2018 only.

In PISA 2018, a new adaptive testing feature in the test design was introduced for reading literacy only. This consisted of a multistage adaptive testing (MSAT) design, whereby, after a core stage, the item selection for students was mostly based on their levels of proficiency on the previous items (OECD, 2020). As a result of this, statistics based on the number or percent of items answered correctly (P+) needed to be adjusted. An Equated P+[11] statistic was developed which is equivalent to the P+[12] obtained from the non-adaptive designs used in previous PISA cycles, allowing comparisons between cycles as well as between the average across OECD countries and Ireland on the P+ (Table 2.5).[13] Standard errors are not reported.[14] Therefore, all results are indicative of broad response patterns only. They have not been subjected to statistical significance tests.

In line with the transition to computer-based testing, the major difference between the 2009 and 2018 reading items is the greater emphasis in 2018 on multiple source texts where a student has to search for information across multiple documents, integrate across texts to generate inferences and assess the quality and credibility of sources and handle conflicts across sources. In 2018, students had to use navigational tools to move between passages of text including those from the older paper-based items. The trend items are considered more static, where texts follow a more linear organisational structure and have fewer scroll bars compared with the 'dynamic texts' with hyperlinks associated with new items in 2018 (OECD, 2019b).

11 According to the OECD (2020, Chapter 9, p. 6), "The equated P+ is equivalent to the P+ that would have been obtained from the non-adaptive designs used in previous PISA cycles. It accounts for the differences in proficiencies between the sample that responded to the item and the total sample. Therefore, the 2018 reading MSAT equated P+ can be compared with the classical observed P+ from 2015 (or earlier cycles) as well as with other equated P+ statistics from different countries/economics that participated in PISA 2018."

12 P+ is an ETS-developed index that indicates the usual percent correct for a given item (OECD, 2017, p.133).

13 The equated average P+ across OECD countries is not available.

14 That is, the method to produce these ('bootstrapping' using the PISA replicate weights; OECD, 2009) has not been applied.

Table 2.5 presents the item percent correct scores for 2009 and 2018, overall and for new and trend items separately. Students in Ireland achieved a mean score of 61.7% on the 43 trend items in 2009, which increased to 65.3% in 2012. This dropped slightly to 63.2% in 2015 and dropped again in 2018 to a similar level to that achieved in 2009 (61.7%). Hence, between the 2009 and 2018 cycles, the most recent PISA cycles in which reading was a major domain, there was no difference in performance on the 43 trend items in Ireland. Performance on the new items in 2018 (65.0%) was comparatively higher than performance on the trend items.

Table 2.5: Mean percent correct (P+) scores on all, new and trend reading items, Ireland 2009 – 2018

		Mean percent correct for:				
	N of items in cycle	All items in each cycle	43 Trend items	69 trend items	72 trend items	172 new items
2009	100	60.2	61.7	61.9	-	-
2012	44	64.4	65.3	-	-	-
2015	88	63.4	63.2	-	63.5	-
2018*	244	63.8	61.7	61.0	60.9	65.0
Diff 2018-2009		3.6	0.1	-	-	-
Diff 2018-2015		0.4	-1.4	-	-2.6	-

*Using equated P+ for 2018 to compare with previous years.

Table 2.6 presents a comparison of the mean percent correct scores for the new and trend items on the cognitive process subscales, as described in the PISA 2018 Framework (OECD, 2018), for Ireland and on average across OECD countries.

In this analysis, we use the OECD averages as an *anchor* or *benchmark* to interpret the results for Ireland. For example, it can be seen that percent correct for Ireland on 'new' Corroborate and handle conflict items (45.9%) is lower than for 'new' Reflect on content and form items (63.5%). It would be tempting to conclude that Irish students are doing 'poorly' on the 'Corroborate' item set, but in fact this is not the case when we compare with the OECD averages for these (40.8% and 58.8% respectively), which are lower. Importantly, the last column in Table 2.6 shows that the difference in P+ values between Ireland and the OECD average on these two subsets of items, 5.1% and 4.7% respectively, are similar.

Bearing in mind that the analyses in Table 2.6 are not accompanied by statistical significance tests, it can be seen that:

- In Ireland and across the OECD, the most difficult items (with the lowest percent correct) are associated with Evaluate and Reflect – Corroborate and handle conflict; and Evaluate and Reflect – Assess quality and credibility.
- In Ireland and across the OECD, the easiest items (with the highest percent correct) are Understand – Represent literal meaning; Locate Information – Scan and locate; and Locate Information – Search and select relevant text.
- On average across all new items, the mean percent correct in Ireland was 5.2% higher than on average across the OECD, and across all trend items the mean percent correct was 5.0% higher than on average across the OECD.

- There are three subsets of items for which the difference between Ireland and the OECD average was smaller, suggesting a relative weakness in Irish performance: [New] Evaluate and Reflect – Assess quality and credibility (3.4%); [Trend] Evaluate and Reflect – Corroborate and handle conflict; and [Trend] Understand – Reflect literal meaning.

While this analysis is at times based on relatively small numbers of items, it is nonetheless worthwhile delving into the skills assessed in the three item sets on which Ireland had relatively weak performance. This can provide further insights into relative weaknesses in Irish students' reading skills, in addition to the examination of performance on the PISA 2018 subscales (in Section 2.1.1), in which it was observed that performance was stronger on Locating Information and Evaluating and Reflecting than on Understanding. Based on the PISA 2018 assessment framework (OECD, 2018):

- Assess quality and credibility *typically requires readers to assign discrepant claims to their respective sources and to assess the soundness of the claims and/or the credibility of the source (p. 35) – a skill which is increasingly important in the current era of vast and multiple information sources and high volumes of false or unreliable information*
- Corroborate and handle conflict *typically requires readers to assign discrepant claims to their respective sources and to assess the soundness of the claims and/or the credibility of the source (p. 36) – a skill which underlies many contemporary reading tasks across a range of subject areas*
- Reflect literal meaning *requires readers to comprehend sentences or short passages. Literal comprehension tasks involve a direct or paraphrased match between the question and target information within a passage. The reader may need to rank, prioritise or condense information at a local level (p. 35). This type of reading requires skill not only in the precision of reading what is presented but also proficiency in ordering and sequencing information, sometimes with reference to information already known to the reader.*

Table 2.6: Comparison of mean percent correct (P+) scores on new and trend items in Ireland and across OECD countries in 2018 on the Cognitive Process Subscales

		N	Ireland %	OECD %	Irel – OECD %
New Items					
Evaluate and Reflect	Corroborate and handle conflict	16	45.9	40.8	5.1
	Reflect on content and form	23	63.5	58.8	4.7
	Assess quality and credibility*	8	46.4	42.9	3.4
Understand	Integrate and generate inferences	52	64.8	59.4	5.4
	Represent literal meaning	38	74.4	69.8	4.7
Locate Information	Scan and locate	16	70.9	65.1	5.9
	Search and select relevant text*	19	67.3	60.8	6.5
All new items		*172*	*65.0*	*59.8*	*5.2*
Trend Items					
Evaluate and Reflect	Corroborate and handle conflict	2	36.1	34.6	1.6
	Reflect on content and form	15	65.7	60.7	5.0
	Assess quality and credibility	-	-	-	
Understand	Integrate and generate inferences	26	59.9	54.9	5.0
	Represent literal meaning	15	54.2	51.4	2.8
Locate Information	Scan and locate	14	68.1	61.9	6.2
	Search and select relevant text	-	-	-	
All trend items		*72*	*60.9*	*56.2*	*4.7*
All items		244	63.8	58.7	5.0

*New cognitive process subcategory in PISA 2018 reading literacy.

Next we compare performance in Ireland and on average across the OECD for new and trend items, this time classified by text type (Table 2.7). The results show that across both Ireland and the OECD, Multiple source text items were more difficult than Single source text items. In particular, the Multiple source text trend items have the lowest percent correct. However, just two trend items are classified as multiple source texts so no conclusions should be drawn. In terms of the Ireland-OECD percent correct comparisons, these range from 4.8% to 5.9% (with the exception of the two trend multiple source texts). This indicates that Irish performance across both text types was relatively stronger than on average across the OECD, and to a similar degree.

Table 2.7 Comparison of new and trend items in Ireland and across OECD countries in 2018 on the Source Text Subscale

	N	Ireland %	OECD %	Ireland – OECD %
New Items				
Multiple Source Texts	50	58.1	52.2	5.9
Single Source Text	122	67.8	62.9	4.9
All new items	*172*	*65.0*	*59.8*	*5.2*
Trend Items				
Multiple Source Texts	2	36.1	34.6	1.6
Single Source Text	70	61.6	56.8	4.8
All trend items	*72*	*60.9*	*56.2*	*4.7*
All items	**244**	**63.8**	**58.7**	**5.0**

2.4 SUMMARY

Students in Ireland achieved a mean score of 518.1 on the PISA 2018 overall reading literacy scale, which is significantly higher than the OECD average of 487.1. The mean scores achieved by students in Ireland on the reading process subscales (Locate Information, Understand, and Evaluate and Reflect) were significantly higher than the corresponding OECD averages, with students in Ireland doing relatively better on Locating Information and Evaluating and Reflecting than on Understanding. Performance in Ireland was also significantly higher than on average across OECD countries on the two reading source subscales (Single and Multiple Source texts), though neither text type was identified as a relative strength.

Ireland had significantly more higher-achieving students (12.1%) than the average for OECD countries (8.7%) and significantly fewer lower-achieving students (11.8% and 22.6% respectively) in 2018. In Ireland, female students achieved a mean score (529.6) that is 23.2 points higher than that of male students (506.4) on overall reading literacy. Ireland's performance on reading has returned to the levels achieved prior to 2009, with the overall reading performance increasing significantly by 22.4 points from 2009 to 2018. This change in performance should be interpreted with reference to the unexpected decline in the performance of students in Ireland between 2000 and 2009 (see Chapter 1), as well as changes in the assessment mode in PISA from paper-based to computer-based from 2015 onwards, and the implementation of a new reading literacy framework to reflect this in 2018. While mean performance in reading has returned to the level achieved prior to 2009, the percentage of female students at or above proficiency Level 5 has dropped significantly since 2000, with 17.4% higher-achieving female students in 2000 compared to 13.8% in 2018.

The spread (distribution) of reading achievement scores can be examined with reference to the inter-decile range. This has fluctuated over cycles with the first cycle seeing a score difference between the 10th and 90th percentile of 239.8, which dropped to 220.9 in 2003 (the narrowest difference over the cycles) and widened again in 2018 to a difference of 236.4, suggesting relatively little change in the distribution of scores over time.

Further analysis of the results at the item level, i.e., comparing item percent correct scores

by process and text type across Ireland and the OECD, provided some additional insights into the profile of Irish performance. In particular, these analyses provided evidence that Irish performance is relatively weaker in sub-parts of the PISA reading test assessing the quality and credibility of a text; corroborating and handling intra- or inter-text conflict (or contradiction); and literal comprehension tasks. These observations have potential implications for teaching and learning practices in Ireland.

Chapter 3 – Students' Reading Habits and Strategies

This chapter looks at students' reading habits and strategies and their reading achievement. The data are based on questions that students were asked as part of the student questionnaire that is administered in conjunction with the PISA assessment. The chapter is divided into four main sections: engagement in reading, diversity of reading materials, the learning environment in English classes, and reading and learning strategies. The data in this chapter are based on descriptive statistics. The variables considered here are examined again in Chapter 7 in the context of multi-level models of reading achievement that adjust for associations with other variables.

3.1 ENGAGEMENT IN READING

In this section, two indicators of reading engagement among students are examined: frequency of reading for enjoyment and levels of reading for enjoyment (attitude to reading).

3.1.1 Frequency of reading for enjoyment

Across studies, the frequency of reading is strongly related to reading comprehension (Baker & Wigfield, 1999; Cipielewski & Stanovich, 1992). Better readers tend to read more because they are more motivated to read, which, in turn, leads to improved vocabulary and comprehension skills (OECD, 2010a). PISA 2018 obtained information on frequency of reading by asking students to indicate how often they read for enjoyment (I do not read for enjoyment; 30 minutes a day or less; 30-60 minutes a day; more than 1 hour a day). In Ireland, nearly half of all students (47.7%) reported that they did not read for enjoyment, 23.9% read for up to 30 minutes per day, 15.1% read for between 30 and 60 minutes, while 13.2% read for more than one hour per day (Table 3.1). Those who did not read for enjoyment achieved a mean reading score (484.1) which was significantly lower than the mean score of those who read for up to 30 minutes a day (539.4). Students who read for longer, between 30 and 60 minutes a day and more than one hour a day had significantly higher reading scores than students who read for less than 30 minutes a day (552.5 and 571.0 respectively for between 30 and 60 minutes a day and more than one hour a day).

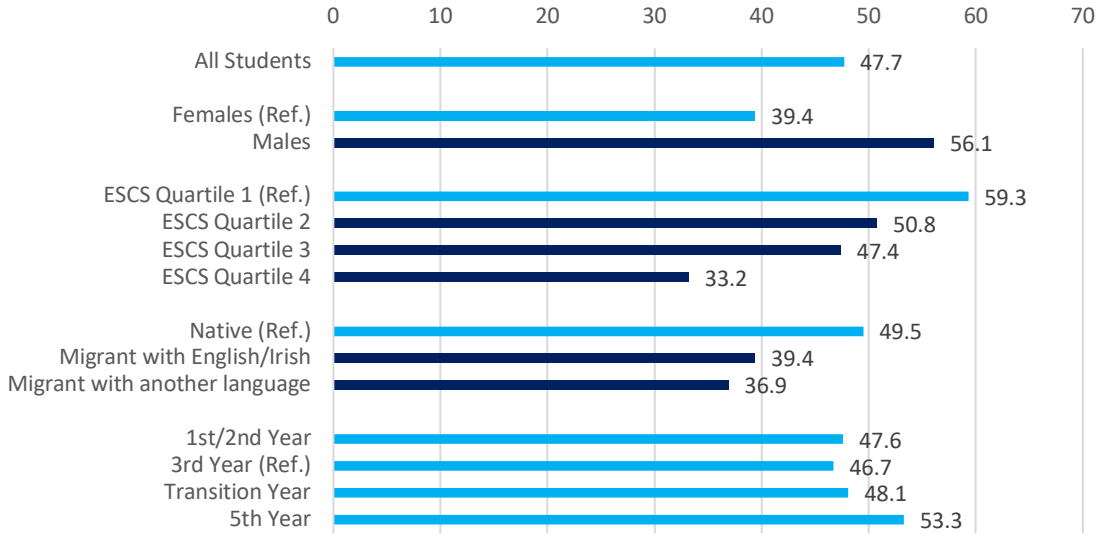
Table 3.1: Percentage of students in Ireland reading for enjoyment and their mean reading achievement scores

How much time do you usually spend reading for enjoyment?	All Students			
	%	SE	MR	SE
I do not read for enjoyment	47.7	(0.95)	**484.1**	(2.15)
30 minutes or less a day (Ref.)	23.9	(0.68)	539.4	(3.13)
31-60 minutes a day	15.1	(0.57)	**552.5**	(2.88)
More than 1 hour a day	13.2	(0.54)	**571.0**	(4.04)

See Appendix Table A3.1. Significant differences in **bold**.

Figure 3.1 presents the proportion of students who did not read for enjoyment by gender, ESCS quartiles, immigrant and language status and year level. A significantly higher proportion of males (56.1%) than females (39.4%) reported not reading for enjoyment. The lowest ESCS[15] quartile (Quartile 1) had the highest proportion of non-readers (59.3%), with all other quartiles having significantly fewer (Figure 3.1). There are also statistically significant differences by immigrant and language status with significantly more native non-readers (49.5%) than immigrants who speak English/Irish at home (39.4%) or immigrants who speak another language at home (36.9%). There were no significant differences in proportions across the different year levels, though it is notable that 53.3% of students in Fifth year described themselves as non-readers (Figure 3.1).

Figure 3.1. Percentage of students in Ireland who report that they do not read for enjoyment by all students, gender, ESCS quartile, immigrant and language status and year level



See Appendix Table A3.1. Significant differences denoted by **darker bars**.

Since 2009, there has been a substantial and significant increase in the percentage of students in Ireland who do not read for enjoyment, from 41.9% (2009) to 47.7% in 2018 (Appendix Table A3.2). In addition, there has been a significant decrease in the percentage of students in Ireland reading for more than one hour per day in 2018 compared to 2009 (13.2% and 15.8% respectively) (McKeown et al., 2019).

3.1.2 Level of enjoyment of reading

Students were presented with five statements relating to enjoyment of reading. They were asked to indicate their level of agreement (strongly disagree, disagree, agree, strongly agree). Table 3.2 presents the five statements and the proportions who reported that they agreed or strongly agreed with each one, overall and by gender. Over half of students reported that they 'read only if I have to' (51.5%) and 'read only to get the information that I need' (52.0%). Over one quarter of students reported that 'reading is a waste of time' (26.8%) while 30.8% reported that 'reading is one of my favourite hobbies'. Female students had significantly

15 The mean ESCS score for those who do not read for enjoyment is -0.048, which is lower than for all other groups (0.269 for less than 30 minutes a day, 0.322 for 30-60 minutes a day and 0.293 for more than 1 hour a day).

higher rates of agreement than males for positively-worded statements about reading and significantly lower rates for negatively-worded statements (e.g., 'I read only if I have to' and 'for me, reading is a waste of time').

Table 3.2: Percentage of students in Ireland who 'agree' or 'strongly agree' with various statements about their enjoyment of reading – all students and by gender

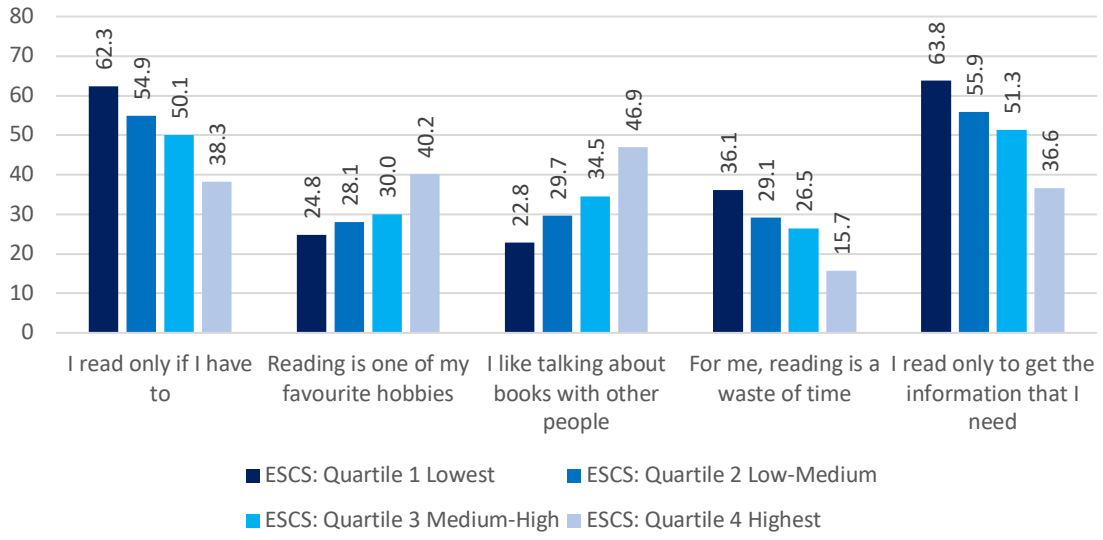
Percentage of students who 'agree' or 'strongly agree' that…	All Students		Females (Ref.)		Males	
	%	SE	%	SE	%	SE
I read only if I have to	51.5	(0.93)	44.2	(1.06)	**59.0**	(1.23)
Reading is one of my favourite hobbies	30.8	(0.63)	39.3	(0.89)	**22.1**	(0.80)
I like talking about books with other people	33.5	(0.72)	43.8	(1.05)	**23.0**	(0.83)
For me, reading is a waste of time	26.8	(0.79)	21.3	(0.97)	**32.4**	(1.12)
I read only to get the information that I need	52.0	(0.93)	43.2	(1.20)	**60.9**	(1.23)

See Appendix Table A3.3. Significant differences in **bold**.

The percentage of students reporting to read only if they have to has increased significantly from 39.2% in 2009 to 51.5% in 2018 (Appendix Table A3.4). There were also significant increases in the proportions of students who reported that reading is a waste of time (24.1% in 2009 to 26.8% in 2018) and those who read only to get the information that they need (44.9% in 2009 to 52.0% in 2018).

Figure 3.2 shows the percentage of students who reported that they 'agree' or 'strongly agree' with the five statements about enjoyment of reading by ESCS quartiles. In all cases, there was a linear relationship across the quartiles with a positive association for positively-worded questions and a negative association for negatively-worded questions. Students in the lowest quartile responded less favourably to statements about enjoyment of reading than students in other quartiles.

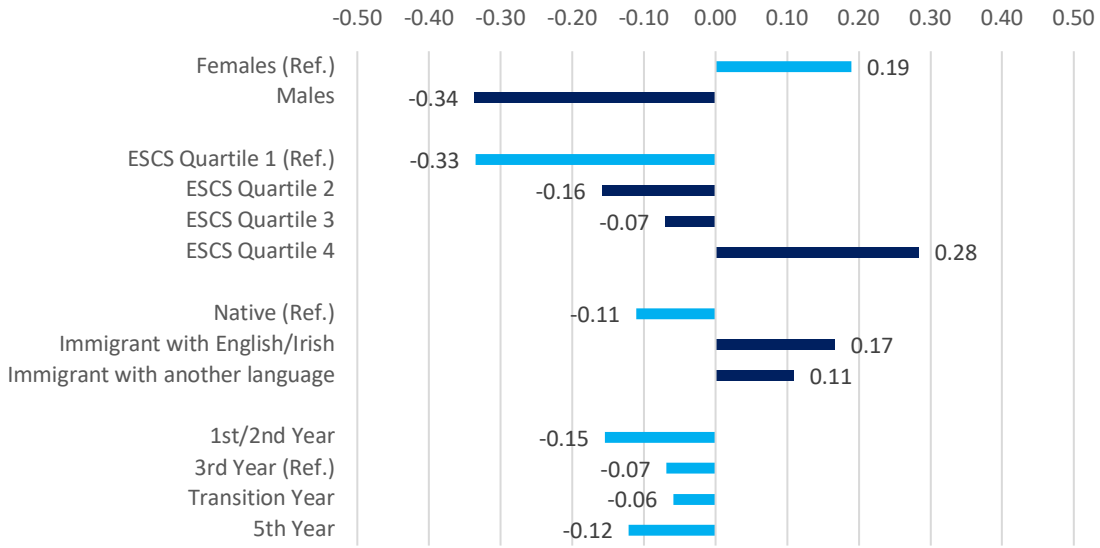
Figure 3.2: Percentage of students in Ireland who 'agree' or 'strongly agree' with various statement about their enjoyment of reading, by ESCS quartile



See Appendix Table A3.3. In all cases, quartiles 2, 3 and 4 are significantly different to quartile 1 apart from 'Reading is one of my favourite hobbies' where only quartile 3 and quartile 4 are significantly different from quartile 1.

A composite index of enjoyment of reading was constructed by the OECD, based on the statements in Table 3.2. The mean score for Ireland on the index was -0.07, indicating a slightly lower level of enjoyment compared to the OECD average (-0.06). Figure 3.3 presents mean scores on the index of enjoyment of reading by gender, ESCS quartile, immigrant and language status and year. The mean score for males (-0.34) is significantly lower than for females (0.19), which was also seen across OECD countries. Students in the lowest ESCS quartile (quartile 1) had a significantly lower mean score than all other quartiles. There were also significant differences by immigrant and language status as native speakers had a significantly lower mean score (-0.11) than immigrants who speak English/Irish at home (0.17) and immigrants who speak another language at home (0.11).

Figure 3.3: Mean score of the index of enjoyment of reading by gender, ESCS quartiles, immigrant and language status and year



See Appendix Table A3.28. Significant differences denoted by **darker bars**.

The correlation between enjoyment of reading and reading achievement is 0.44, indicating a relatively strongly link between the two. This correlation coefficient is significant and all other correlation coefficients in this chapter are significant unless otherwise stated (Appendix Table A3.29).

3.2 DIVERSITY OF READING MATERIALS AND SELF-PERCEPTIONS OF THEIR READING ABILITIES

This section examines the diversity of materials that students reported reading, including the formats using for reading, the range of reading materials read in school, and frequency of reading various online materials. It also looks at students' self-perceptions of their reading abilities.

3.2.1 Format used for reading

Students in PISA 2018 were asked to indicate the types (format) of the materials they read. One third of students in Ireland (33.7%) reported that they read books more often in paper format than in digital format and 12.0% said that they read books more often on digital devices (e.g., e-reader, tablet, smartphone and computer) (Appendix Table A3.5). Only 13.7% reported reading books equally often in paper format and on digital devices while the remaining proportion (40.7%) reported that they rarely or never read (any) books. The mean reading score of those who rarely or never read books (478.7) was significantly lower than for other formats or combinations of formats (Appendix Table A3.5).

3.2.2 Range of reading materials

There has been considerable debate as to which type of reading may be most effective in fostering reading skills and improving reading performance (OECD, 2010a). According to the OECD, in most countries, proficient readers are not only those students who enjoy reading and who read for enjoyment regularly, but also those who read a wide variety of materials (OECD, 2010a). In PISA 2009 and 2018 students were asked how often they read different materials by choice and the results for Ireland are presented in Table 3.3. In all cases, the proportion who reported reading a particular material in 2018 was lower than in 2009. There were substantial and significant drops in the proportions who read magazines and newspapers from 2009 to 2018 (possibly related to reduced access to such materials by students). There was a significant but smaller difference for fiction in this period. Appendix Table A3.6 includes breakdowns by gender, ESCS quartile, immigrant and language status and year. More females reported reading magazines, fiction and non-fiction books than males in 2018, while more males reported reading comic books and newspapers than females.

Table 3.3: Percentage of students in Ireland who read selected types of reading material 'several times a week' by choice, PISA 2009 and 2018

Percentage of students who 'agree' or 'strongly agree' that they read text several times a week	2009		2018 (Ref.)	
	%	SE	%	SE
Magazines	**23.5**	(0.91)	3.0	(0.23)
Comic books	2.6	(0.28)	2.4	(0.22)
Fiction	**14.3**	(0.61)	12.5	(0.52)
Non-fiction books	5.4	(0.39)	5.0	(0.30)
Newspapers	**41.2**	(1.00)	9.1	(0.42)

See Appendix Table A3.7. Significant differences in **bold**.

3.2.3 Reading in school

Students were asked how often, during the last month, they engaged in various reading tasks in school with reference to a four-point scale (not at all, once, two or three times, many times). Over one third (34.7%) reported reading texts that include diagrams or maps 'many times', while a similar proportion (33.9%) reported reading texts that include tables or graphs with the same frequency (Table 3.4). Lower proportions were reported for reading fiction (27.9%) and digital texts including links (13.2%).

Table 3.4: Percentage of students in Ireland who reported reading selected text formats in school 'many times' in previous month

Percentage of students in school who 'many times during the last month' read…	%	SE
Texts that include diagrams or maps	34.7	(0.69)
Fiction (e.g., novels, short stories)	27.9	(0.87)
Texts that include tables or graphs	33.9	(0.70)
Digital texts including links	13.2	(0.61)

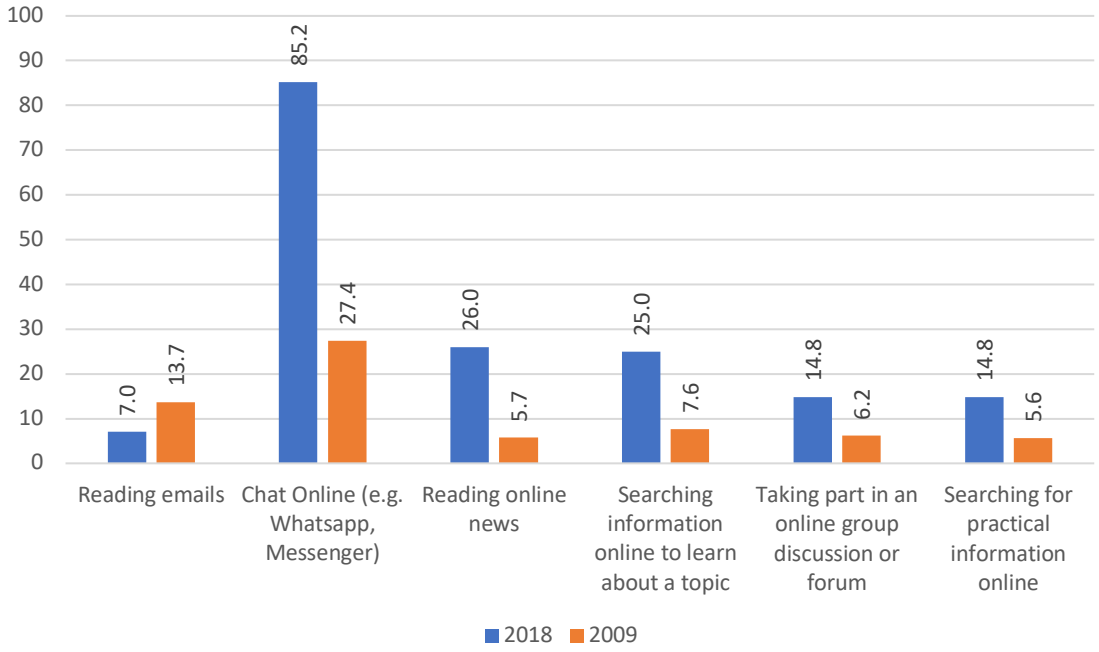
See Appendix Table A3.8.

Across gender, ESCS quartile, immigrant and language status and year level, response patterns were fairly consistent (Appendix Table A3.8). Females reported reading each text type more frequently than males in all cases. Slightly higher proportions of students in the highest ESCS quartile reported reading the different text types 'many times', compared with those in the lowest ESCS quartile. Native students reported the lowest proportions in each text type when compared to the two immigrant and language groups but differences were small.

3.2.4 Reading online

Students in both 2009 and 2018 were asked to indicate the frequency with which they engaged in various online reading activities. Figure 3.4 presents the proportions of students who reported completing selected activities 'several times a day' in 2009 and 2018. The proportions were significantly higher for almost all activities in 2018, compared with 2009. Most notably, the proportion of students who reported chatting online several times a day rose from 27.4% in 2009 to 85.2% in 2018. Only 'reading emails' saw a decrease, from 13.7% in 2009 to 7.0% in 2018.

Figure 3.4: Percentage of students in Ireland who reported that they complete specified activities online 'several times a day', PISA 2009 and 2018



See Appendix Table A3.10. All categories are **significantly different** from 2009 to 2018.

Table 3.5 presents the proportions of students in Ireland in PISA 2018 by gender who reported completing each online reading activity 'several times a day'. A very high proportion of females (90.4%) reported chatting online 'several times a day', which is significantly higher than the corresponding proportion of males (79.9%). In addition, females reported both searching information online to learn about a topic and searching for practical information online more than male students. Higher proportions of males than females reported reading emails, reading online news and taking part in an online group discussion or forum, but differences were not significant.

Table 3.5: Percentage of students in Ireland who complete the following activities online 'several times a day' by gender, PISA 2018

Percentage of students who…	All Students		Females (Ref.)		Males	
	%	SE	%	SE	%	SE
Read emails	7.0	(0.40)	6.8	(0.59)	7.3	(0.51)
Chat Online (e.g., WhatsApp, Messenger)	85.2	(0.60)	90.4	(0.74)	**79.9**	(0.86)
Read online news	26.0	(0.62)	25.4	(0.86)	26.6	(0.93)
Search information online to learn about a topic	25.0	(0.70)	25.5	(1.04)	24.5	(0.95)
Take part in an online group discussion or forum	14.8	(0.54)	13.9	(0.73)	15.8	(0.75)
Search for practical information online	14.8	(0.49	15.5	(0.67)	14.1	(0.69)

See Appendix Table A3.9. Significant differences in **bold**.

As part of the post-test questionnaire, students were asked to indicate how frequently they used a computer to complete their homework for English. Overall, 70.0% reported using a computer for English homework less than once a week, 17.0% once or twice a week, 8.8% most days and 4.2% every day (Table 3.6). The mean reading score of those who used it every day (490.0) was significantly below the mean score for all other categories, suggesting that lower-achieving readers may use computers more often for English homework. The mean reading score increased as the frequency of use decreased.

Table 3.6: Percentage of students in Ireland who report using their computers for English homework

On average, how often do you use a computer to complete your homework for the following subjects?	%	SE	MR	SE
Every day	4.2	(0.43)	490.0	(8.27)
Most days	8.8	(0.60)	**514.5**	(6.41)
Once or twice a week	17.0	(0.56)	**519.1**	(3.35)
Less than once a week	70.0	(0.99)	**521.3**	(2.24)

See Appendix Table A3.11. Significant differences in **bold**.

3.2.5 Self-perceptions of reading ability

Students were asked to indicate their levels of agreement with six statements relating to their own reading abilities. Table 3.7 presents the proportion of students who reported that they 'agree' or 'strongly agree' with the statements overall and by gender. Overall, nearly four fifths (79.6%) reported being good readers while slightly lower proportions reported that they could read fluently (74.1%) and could understand difficult texts (72.7%). One

quarter of students reported that they found it difficult to answer questions about a text while nearly one in five (18.4%) indicated that they had always had difficulty with reading. The percentage of females (81.5%) who reported being good readers was significantly higher than the percentage of males (77.7%) but significantly more males (75.4%) than females (70.0%) reported that they could understand difficult texts.

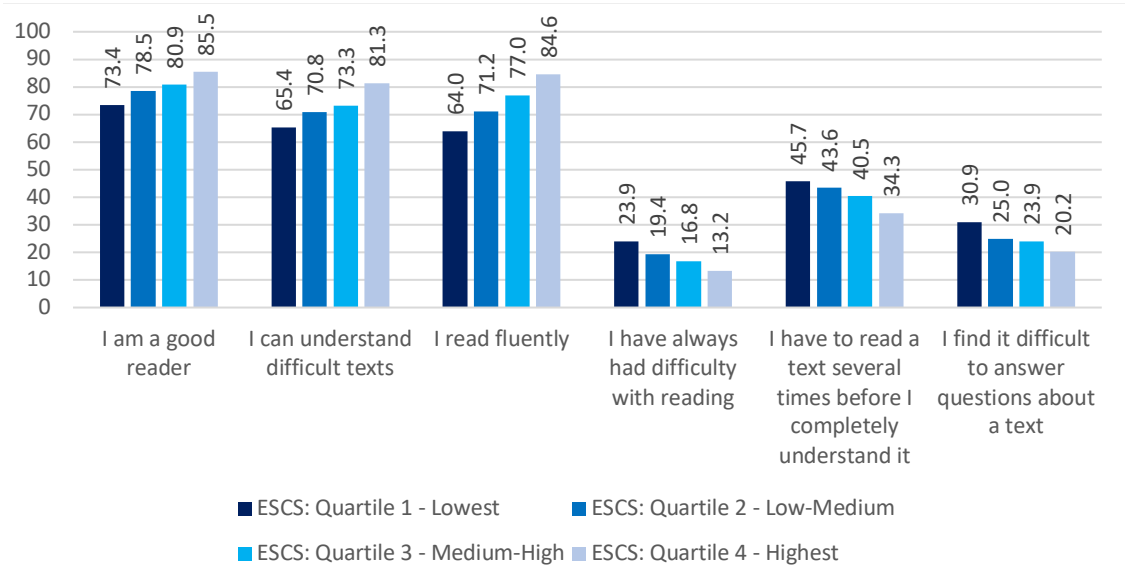
Table 3.7: Percentages of students in Ireland who 'agree' or 'strongly agree' with various statements about reading, overall and by gender

Percentage of students who 'agree' or 'strongly agree' that…	All Students		Females (Ref.)		Males	
	%	SE	%	SE	%	SE
I am a good reader	79.6	(0.54)	81.5	(0.82)	**77.7**	(0.73)
I can understand difficult texts	72.7	(0.64)	70.0	(0.90)	**75.4**	(0.79)
I read fluently	74.1	(0.59)	73.8	(0.78)	74.4	(0.84)
I have always had difficulty with reading	18.4	(0.55)	18.7	(0.73)	18.1	(0.81)
I have to read a text several times before I completely understand it	41.1	(0.71)	45.0	(1.07)	**37.1**	(0.85)
I find it difficult to answer questions about a text	25.0	(0.67)	26.6	(0.86)	**23.4**	(0.88)

See Appendix Table A3.12. Significant differences in **bold**.

Figure 3.5 shows the proportions by ESCS quartile and there is a clear linear trend across all statements. Students in the highest quartile (quartile 4) reported positively about their reading abilities and this decreased through the quartiles. With regards to difficulties with reading, students in the lowest quartile (quartile 1) reported the highest proportion and proportions again decreased as the quartiles increased. Apart from the statement 'I have to read a text several times before I completely understand it,' the differences between the lowest quartile and all other quartiles were statistically significant.

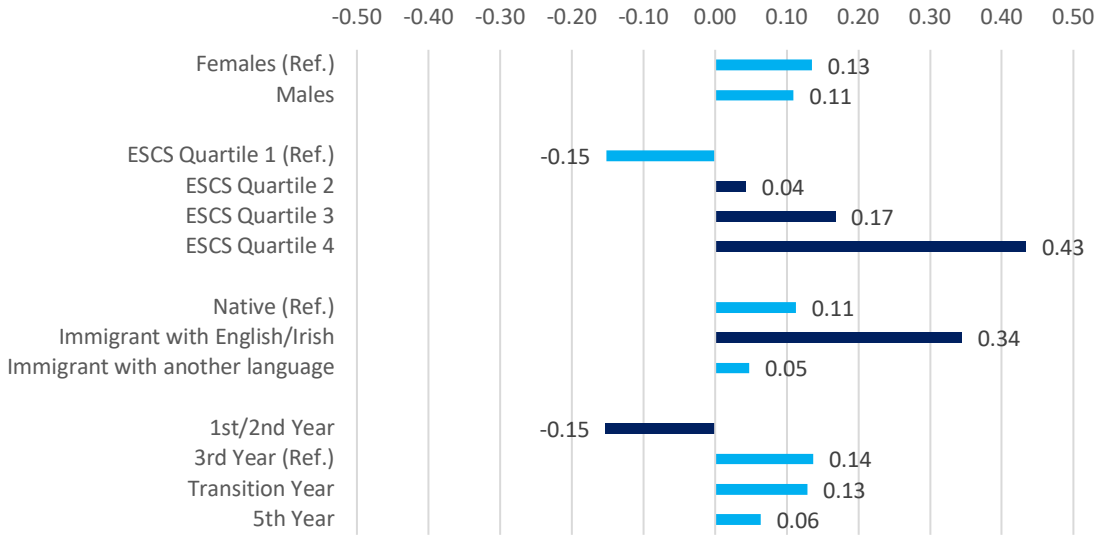
Figure 3.5: Percentages of students in Ireland who 'agree' or 'strongly agree' with various statements about reading, by ESCS quartiles



See Appendix Table A3.12. In all cases, quartiles 2, 3 and 4 are significantly different to quartile 1 apart from 'I have to read a text several times before I completely understand it' where only quartile 4 is significantly different from quartile 1.

Two composite indices were constructed by the OECD, based on the statements in Table 3.7. The first is the perception of competence in reading, which was created from the first three statements and the second is the perception of difficulty with reading created from the second three. In Ireland, the mean value for the perception of competence with reading was 0.12, which was above the OECD average of 0.00. The mean value for the perception of difficulty with reading was 0.00, which was just below the OECD average of 0.01. Figure 3.6 presents the mean values of the perception of competence in Ireland by gender, ESCS quartile, immigrant and language status and year level. The lowest ESCS quartile (quartile 1) had the lowest mean value (-0.15) with all other quartiles being significantly higher. Third years reported the highest mean value (0.14), with First/Second years (a very small grouping in PISA 2018) being significantly lower (-0.15).

Figure 3.6: Mean score of students in Ireland on the the index of perception of competence in reading by gender, ESCS quartiles, immigrant and language status and year

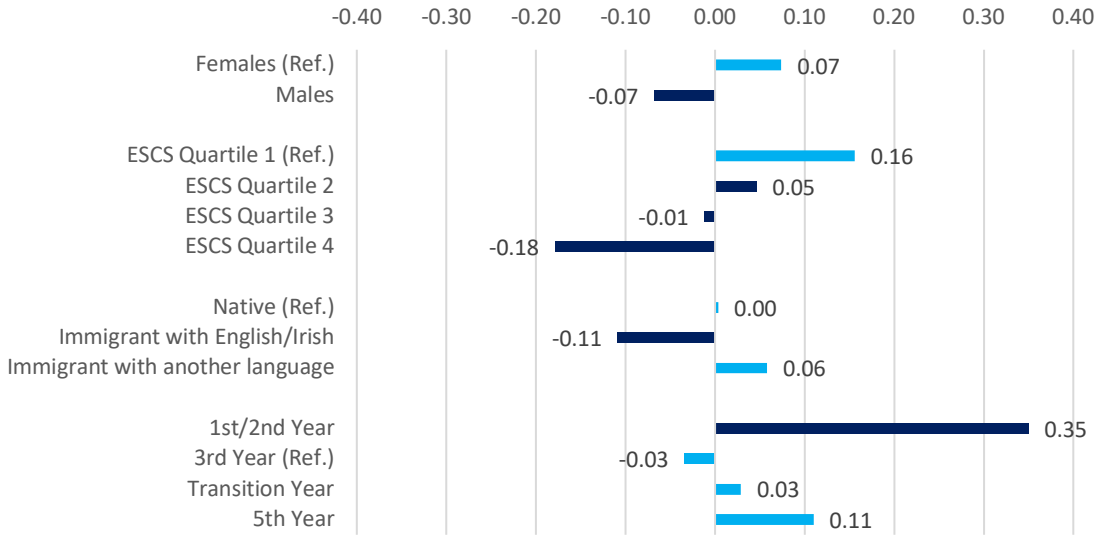


See Appendix Table A3.28. Significant differences in **darker bars.**

The correlation coefficient between PISA 2018 overall reading achievement and the index of perception of competence in reading is 0.49, indicating a relatively strong positive correlation between them (Appendix Table A3.29).

Figure 3.7 presents the mean scores on the perception of difficulty with reading index by gender, ESCS quartile, immigrant and language status and year. Males had a significantly lower mean score (-0.07) than females (0.07), indicating a greater perception of difficulty among females (even though, as noted in Chapter 2, females outperformed males on PISA reading literacy. The mean score decreased as the ESCS increased with the lowest quartile significantly different from all the other quartiles. Immigrants who speak English/Irish at home had a significantly lower mean value (-0.11) than native students (0.00), while the mean score of immigrants who speak another language at home was not significantly different from that of native students.

Figure 3.7: Mean score of the index of perception of difficulty with reading by gender, ESCS quartile, immigrant and language status and year, PISA 2018 in Ireland



See Appendix Table A3.28. Significant differences in **darker bars.**

The correlation between reading achievement and the index of perception of difficulty with reading is -0.39, which indicates a relatively strong negative correlation between reading achievement and perception of difficulty with reading (Appendix Table A3.29).

3.3 READING AND LEARNING STRATEGIES

In this section, students' awareness of three reading strategies are explored: understanding and remembering, summarising information and assessing credibility of sources, with the latter introduced included for the first time in PISA 2018. This section also examines questions about post-reading activities and strategies for reading online.

3.3.1 Understanding and remembering

Students in PISA 2009 and 2018 were asked to indicate the usefulness of a range of strategies for understanding and remembering information in texts, using a 6-point scale ranging from 'not useful at all' to 'very useful'.[16] Table 3.8 gives the percentage of students rating each strategy as 'very useful' in both years. In 2018, students reported the strategies of 'underlining important parts in the text' (53.0%) and 'summarising the text in my own words' (49.3%) as the most useful. While this pattern was also present in 2009, the percentages were significantly higher in that year (65.4% and 62.6% respectively). A slightly lower percentage was also reported in 2018 for the strategy, 'I read the text aloud to another person' (20.1%), while a significantly higher proportion was reported for 'I quickly read through the text twice' (22.9%). Neither of these strategies would be viewed as being very effective.

16 Students were presented with a hypothetical reading task which stated, "You have to understand and remember the information in a text" and asked to respond by rating the usefulness of the different strategies listed.

Table 3.8: Percentage of students in Ireland indicating that they find various strategies for understanding and remembering a text 'very useful' in PISA 2009 and 2018

Percentage of students who find the following strategies 'very useful'…	2009		2018 (Ref.)	
	%	SE	%	SE
I concentrate on the parts of the text that are easy to understand	24.3	(0.78)	24.4	(0.64)
I quickly read through the text twice	**14.9**	(0.58)	22.9	(0.65)
After reading the text, I discuss it with other people	**25.7**	(0.79)	28.1	(0.63)
I underline important parts of the text	**65.4**	(0.97)	53.0	(0.70)
I summarise the text in my own words	**62.6**	(0.72)	49.3	(0.81)
I read the text aloud to another person	21.5	(0.75)	20.1	(0.59)

See Appendix Table A3.14. Significant differences in bold.

Note: 'Very useful' is defined here as 5/6 on a 6-point Likert-type scale, where 1 is not useful at all.

The percentage of students who reported the strategies as 'very useful' differed by year level (Table 3.9). First/Second years had the highest proportion for 'I quickly read through the text twice' (31.1%), and 'I read the text aloud to another person' (22.3%), which can be viewed as lower-level strategies, though these percentages did not differ significantly from those reported by students in Third year (the reference category). More Fifth years strongly endorsed such higher-level strategies as 'after reading the text, I discuss it with other people' (29.6%). Third years reported the highest percentage for 'I underline important parts of the text' (55.1%), which may be in part due to preparation for the Junior Cycle examination and might be viewed as good exam practice (Appendix Table A3.13).

Table 3.9: Percentage of students in Ireland indicating that they find various strategies for reading and understanding a text 'very useful', by year level

	1st/2nd Year		3rd Year (Ref)		Transition Year		5th Year	
	%	SE	%	SE	%	SE	%	SE
I concentrate on the parts of the text that are easy to understand	30.6	(4.39)	23.9	(0.86)	24.5	(1.13)	26.2	(2.16)
I quickly read through the text twice	31.1	(4.92)	21.8	(0.75)	23.7	(1.13)	25.8	(2.27)
After reading the text, I discuss it with other people	24.7	(4.22)	28.0	(0.82)	28.1	(1.46)	29.6	(2.30)
I underline important parts of the text	47.8	(4.75)	55.1	(0.82)	49.2	(1.35)	51.0	(2.60)
I summarise the text in my own words	52.4	(6.10)	50.6	(0.92)	48.4	(1.52)	42.0	(2.48)
I read the text aloud to another person	22.3	(3.96)	20.6	(0.73)	19.5	(1.30)	17.3	(1.84)

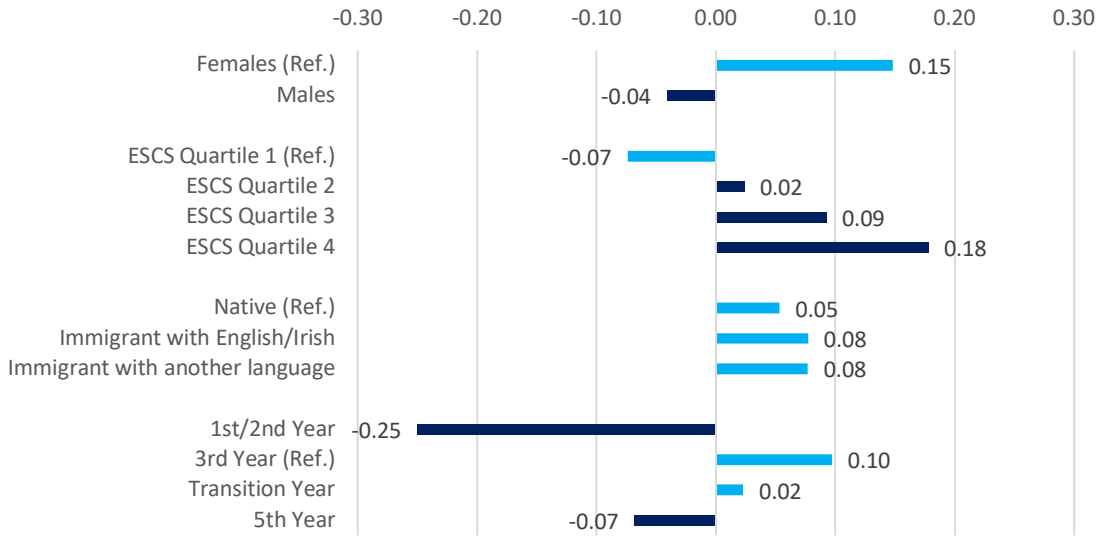
See Appendix Table A3.13.

Note: 'Very useful' is defined here as 5/6 on a 6-point Likert-type scale, where 6 is very useful and 1 is not useful at all (intermediate points were not specified).

An index of understanding and remembering was constructed by the OECD drawing on students' ratings of strategy usefulness. The mean score for Ireland was 0.06, which is slightly but significantly above the OECD average of -0.01 but below the 2009 mean score of 0.16 in Ireland.

Figure 3.8 presents mean scores by gender, ESCS quartile, immigrant and language status and year. Females reported a significantly higher mean score (0.15) than males (-0.04). There were also some significant differences across ESCS quartiles and year level. The two highest ESCS quartiles had significantly higher mean scores than the lowest quartile. Also, both First/Second years and Fifth years had significantly lower mean scores than Third years.

Figure 3.8: Mean scores of students in Ireland on the index of understanding and remembering by gender, ESCS quartile, immigrant and language status and year level, PISA 2018



See Appendix Table A3.13. Significant differences denoted by darker bars.

The correlation between reading and achievement and the index of understanding and remembering is 0.28, indicating a relatively strong link between those endorsing higher-level understanding and remembering strategies and reading achievement (Appendix Table A3.29).

3.3.2 Summarising information

Students were asked to evaluate the extent to which they found various strategies useful for summarising a piece of informational, fact-based text (Table 3.10).[17] In 2009 and 2018, higher-order strategies were endorsed as useful by the highest proportions of students including 'I read through the text, underlining the most important sentences. Then I write them in my own words as a summary' (57.3% in 2018 and 72.5% in 2009) and 'I carefully check whether the most important facts in the text are represented in the summary' (58.7% in 2018 and 68.9% in 2009). In all cases, the percentage of students indicating the strategies as 'very useful' decreased from 2009. Aside from 'I try to copy out accurately as many sentences as possible', the proportions were significantly lower in 2018.

17 Students were presented with a hypothetical reading task which stated, "You have just read a long and difficult two-page text about changes in the water level of a lake in Africa. You have to write a summary", and were asked to respond by rating the usefulness of the different strategies listed.

Table 3.10: Percentage of students in Ireland indicating that they find various strategies for summarising information 'very useful', PISA 2018 and 2009

Percentage of students who find the following strategies 'very useful'…	2018 (Ref.)		2009	
	%	SE	%	SE
I write a summary. Then I check that each paragraph is covered in the summary because the content of each paragraph should be included	26.2	(0.73)	37.6	(0.81)
I try to copy out accurately as many sentences as possible	13.0	(0.50)	14.0	(0.63)
Before writing the summary, I read the text as many times as possible	28.7	(0.71)	40.0	(0.91)
I carefully check whether the most important facts in the text are represented in the summary	58.7	(0.78)	68.9	(0.98)
I read through the text, underlining the most important sentences. Then I write them in my own words as a summary	57.3	(0.71)	72.5	(0.97)

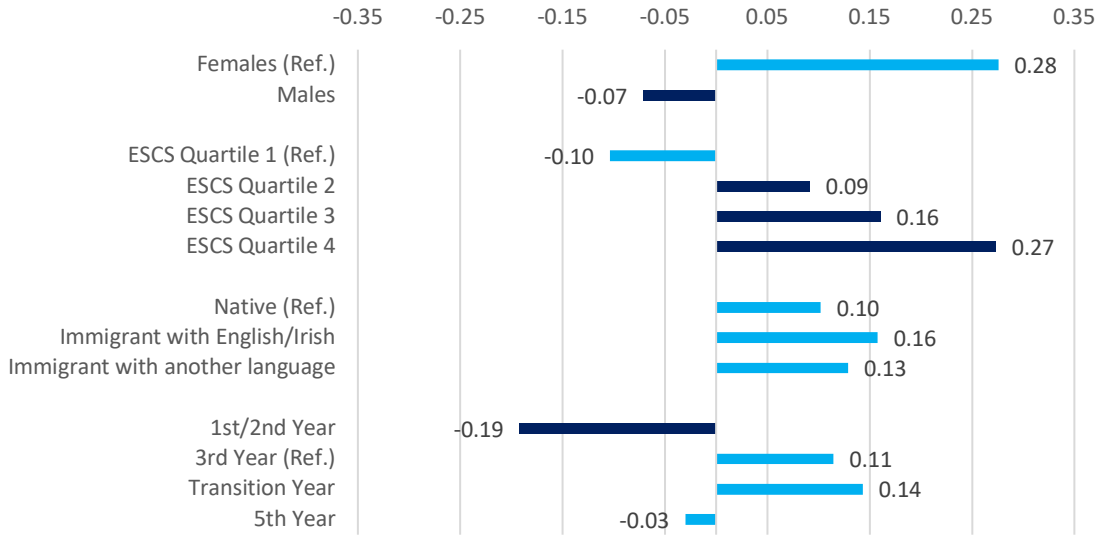
See Appendix Table A3.16. Significant differences in **bold**.

Note: 'Very useful' is defined here as 5/6 on a 6-point Likert-type scale, where 6 is very useful and 1 is not useful at all (intermediate points were not specified).

A composite index of summarising strategies was constructed by the OECD with a mean score of 0.0 and a standard deviation of 1.0. The mean score for Ireland was 0.10, which is significantly above the OECD average (0.00) but below the mean score in Ireland in 2009 of 0.14.

As before with the understanding and remembering index, females achieved a significantly higher mean score than males (0.28 and -0.07 respectively) (Figure 3.9). The lowest ESCS quartile had the lowest mean score (-0.10) and mean scores increased through the higher quartiles. The mean score of First/Second years (-0.19) was significantly below that of Third years (0.11). The mean score of Transition years (0.14) was not significantly different from that of the reference group (Third years) (0.11).

Figure 3.9: Mean score of students in Ireland on the index of summarising information by gender, ESCS quartile, immigrant and language status and year



See Appendix Table A3.28. Significant differences denoted by **darker bars**.

The correlation between the index of summarising information and reading achievement is 0.39, indicating a generally strong link between endorsement of higher-level strategies for summarising texts and reading achievement (Appendix Table A3.29).

3.3.3 Assessing credibility of sources

A new metacognition scenario introduced in PISA 2018 focused on an important process of online reading – the quality and the credibility of sources. Students were asked to evaluate the appropriateness of various strategies for assessing the credibility of an email.[18] Strategies such as 'checking the sender's email address' were more strongly endorsed compared with strategies which might be perceived to be less effective such as 'clicking on the link to fill out the form as soon as possible'. Females endorsed the more effective strategies more strongly than males, with significantly higher levels of endorsement for three of them (Table 3.11). In all cases, percentages in Ireland were stronger than the corresponding OECD averages.[19]

Table 3.11: Percentage of students indicating that they find various strategies for assessing the credibility of an email 'very appropriate', all students and by gender

Percentage of students who find the following strategies 'very appropriate'…	All Students		Female (Ref.)		Males	
	%	SE	%	SE	%	SE
Answer the email and ask for more information about the smartphone	21.7	(0.62)	22.4	(0.85)	21.0	(0.91)
Check on the sender's email address	58.1	(0.80)	62.9	(0.93)	53.2	(1.16)
Click on the link to fill out the form as soon as possible	10.6	(0.38)	11.2	(0.46)	10.0	(0.55)
Delete the email without clicking on the link	33.7	(0.77)	35.8	(0.95)	31.5	(1.01)
Check the mobile phone operator's website to see whether the smartphone offer is mentioned	56.1	(0.82)	59.2	(1.13)	52.9	(1.07)

See Appendix Table A3.17. Significant differences are in **bold**.

Note: 'Very useful' is defined here as 5/6 on a 6-point Likert-type scale, where 1 is not useful at all.

Comparing ESCS quartiles, 'check on the sender's email address', 'delete the email without clicking on the link' and 'check the mobile phone operator's website to see whether the smartphone offer is mentioned' had increasing mean percentages as the quartiles increased (Table 3.12). More students in other quartiles more strongly endorsed these strategies than students in the lowest quartile (quartile 1). There were lower percentages and less variation across ESCS quartiles for seemingly less-effective strategies such as 'answer the email and ask for more information about the smartphone' and 'click on the link to fill out the form as soon as possible'.

18 Students were presented with a hypothetical reading task which stated, "You have received an email in your inbox from a well-known mobile phone operator telling you that you are one of the winners of a smartphone. The sender asks you to click on the link to fill out a form with your personal information so that they can send you the smartphone" and asked to respond by rating the usefulness of the different strategies listed.

19 OECD averages were 9.8% (SE = 0.05), 23.0% (0.06), 5.4% (0.04), 12.5% (0.06) and 21.6% (0.06) respectively (PISA 2018 international database).

Table 3.12: Percentage of students indicating that they find various strategies for assessing the credibility of an email 'very appropriate', by ESCS quartile

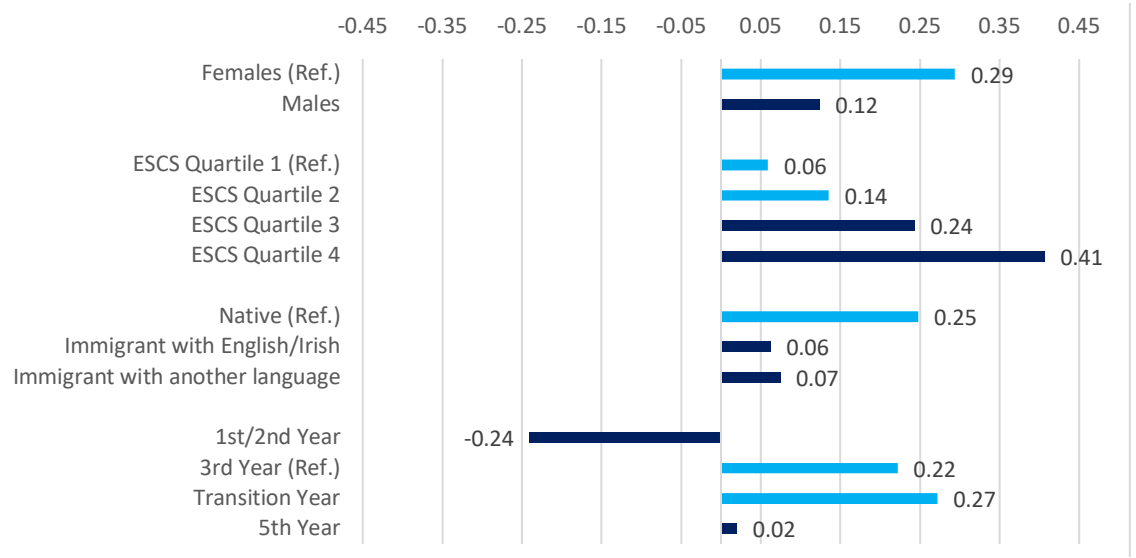
Percentage of students who find the following strategies 'very appropriate'…	ESCS: Quartile 1 (Ref.)		ESCS: Quartile 2		ESCS: Quartile 3		ESCS: Quartile 4	
	%	SE	%	SE	%	SE	%	SE
Answer the email and ask for more information about the smartphone	20.8	(1.14)	22.5	(1.06)	21.9	(1.15)	21.2	(1.18)
Check on the sender's email address	49.1	(1.48)	55.3	(1.46)	61.0	(1.30)	67.0	(1.47)
Click on the link to fill out the form as soon as possible	10.4	(0.87)	11.6	(0.82)	10.3	(0.90)	9.5	(0.78)
Delete the email without clicking on the link	29.9	(1.25)	31.7	(1.24)	34.1	(34.1)	39.1	(1.37)
Check the mobile phone operator's website to see whether the smartphone offer is mentioned	47.3	(1.74)	53.8	(1.32)	58.6	(58.6)	64.6	(1.58)

See Appendix Table A3.17. Significant differences in **bold**.

Note: 'Very useful' is defined here as 5/6 on a 6-point Likert-type scale, where 1 is not useful at all.

A composite index of assessing credibility of information strategies was constructed by the OECD with a mean score of 0.00 and a standard deviation of 1.0. The mean score for Ireland was 0.21, which is significantly above the OECD average. The mean score of males (0.12) was significantly below females (0.29). There was a linear trend by ESCS quartile with the two highest quartiles (quartile 3 and quartile 4) being significantly higher on average than the lowest quartile (quartile 1) (Figure 3.10). Immigrant students who speak English/Irish at home (0.06) and immigrants who speak another language at home (0.07) had significantly lower mean scores than native students (0.25). The mean scores of First/Second years (-0.24) and Fifth years (0.02) were significantly below Third years (0.22), while the highest mean score by year was reported by Transition years (0.27).

Figure 3.10: Mean scores of students in Ireland on the index of assessing credibility of information by gender, ESCS quartile, immigrant and language status and year



See Appendix Table A3.28. Significant differences denoted by **darker bars**.

The correlation between the index of assessing credibility of information and reading achievement is 0.46, indicating a moderately strong link between deployment of strategies for assessing the credibility of information and overall performance (Appendix Table A3.29).

3.3.4 Post-reading activities in school

On an international question analysed at national level only, students in PISA 2018 were asked to indicate what activities their teacher usually asked them to complete after reading a book or book chapter for their English class (Table 3.14). Activities such as 'answer questions about the book or the chapter' (87.4%), 'give your personal thoughts about the book or the chapter' (85.1%), 'list and write a short description of the main characters (85.3%) and 'write a summary of the book or the chapter' (78.0%) were undertaken most frequently. 'Compare the content of the book or the chapter with your own experience' was reported least frequently (33.8%), while all other activities were completed by over one-half of the students.

Table 3.14: Percentage of students in Ireland whose teacher asks them to complete the various activities after reading a book or book chapter in English classes

When you have to read, does the teacher ask you to…	All Students	
	%	SE
Write a summary of the book or the chapter	78.0	(0.82)
List and write a short description of the main characters	85.3	(0.58)
Discuss in small groups with other students who read the same book/chapter	58.6	(1.13)
Give your personal thoughts about the book or the chapter	85.1	(0.59)
Answer questions about the book or the chapter	87.4	(0.65)
Compare the content of the book or the chapter with your own experience	33.8	(0.83)
Compare the book with other books or texts on a similar topic	60.3	(0.90)
Select a passage you liked or disliked and explain why	67.3	(0.82)
Write a text related to what you have read	58.8	(0.80)

See Appendix Table A3.18.

The range of proportions reported by different year levels differed greatly for various strategies (Table 3.15). Transition year students generally reported the lowest proportions for many of the strategies while First/Second years generally reported the highest proportions. This suggests that Transition year students may be assigned post-reading activities that are different to those assigned at other grade levels. Almost all students in First/Second year (96.8%) reported that they 'answer questions about the book or the chapter', with the proportion decreasing to 78.4% for Transition year students. Again, it might be noted that relatively few PISA 2018 students in Ireland were in First/Second year.

3.3.5 Strategies for online learning at school

Students were asked whether they had been taught various strategies for online reading and study (Table 3.16). In all cases, Ireland reported higher proportions than on average across OECD countries. More than four fifths (83.1%) of students reported that they had

been informed about the consequences of making information publicly available online. This was substantially higher than the OECD average (36.0%). However, there was a significant difference in the proportion reported by females and males (86.5% for females and 79.6% for males). Similar proportions of students in Ireland reported that they were taught how to decide whether to trust information from the internet and how to detect whether the information is subjective or biased (58.2% and 59.1% respectively). However, only 28.0% were taught how to detect phishing or spam emails. In all cases, the proportions reported by First/Second years were higher than Fifth years (Appendix Table A3.19). In particular, for 'how to decide whether to trust information from the internet' and 'how to compare different web pages and decide what information is more relevant for your school work', there were differences of 13.4% and 13.1% respectively. In interpreting this, it might be noted that just 2% of the PISA 2018 sample in Ireland were in First/Second year. Furthermore, in considering Table 3.15, it might be noted that the learning and teaching methodologies for Transition year are generally different to those implemented at other year levels.

Table 3.15: Percentages of students in Ireland whose teacher asks them to complete various activities after reading a book or book chapter, by year

When you have to read, does the teacher ask you to…	1st/2nd Year		3rd Year		TY		5th Year	
	%	SE	%	SE	%	SE	%	SE
Write a summary of the book or the chapter	87.6	(3.18)	82.1	(0.93)	68.9	(1.63)	75.9	(2.17)
List and write a short description of the main characters	92.0	(2.56)	91.6	(0.63)	71.2	(1.29)	84.4	(1.85)
Discuss in small groups with other students who read the same book/chapter	70.0	(4.36)	58.5	(1.37)	58.1	(1.66)	58.4	(2.32)
Give your personal thoughts about the book or the chapter	88.9	(2.64)	86.6	(0.62)	81.6	(1.33)	84.8	(1.76)
Answer questions about the book or the chapter	96.8	(1.58)	91.0	(0.68)	78.4	(1.55)	89.2	(1.83)
Compare the content of the book or the chapter with your own experience	59.0	(4.90)	34.0	(1.03)	31.5	(1.25)	34.2	(2.86)
Compare the book with other books or texts on a similar topic	61.5	(4.79)	63.3	(1.28)	51.6	(1.50)	66.1	(2.88)
Select a passage you liked or disliked and explain why	81.3	(3.44)	70.4	(0.95)	59.6	(1.52)	66.8	(2.12)
Write a text related to what you have read	78.9	(4.18)	61.2	(1.03)	51.6	(1.53)	59.5	(2.78)

See Appendix Table A3.18.

Table 3.16: Percentage of students in Ireland who had been taught various online reading strategies at school

At school, have you ever been taught the following things?	Ireland		OECD	
	%	SE	%	SE
How to use keywords when using a search engine	44.3	(0.92)	26.5	(0.07)
How to decide whether to trust information from the internet	58.2	(0.92)	32.9	(0.06)
How to compare different web pages and decide what information is more relevant for your schoolwork	45.7	(0.80)	29.7	(0.07)
To understand the consequences of making information publicly available online	83.1	(0.69)	36.0	(0.06)
How to use the short description below the links in the list of search results	35.1	(0.83)	23.0	(0.07)
How to detect whether the information is subjective or biased	59.1	(0.90)	25.9	(0.06)
How to detect phishing or spam emails	28.0	(0.89)	19.6	(0.07)

See Appendix Table A3.19.

In Ireland, students in the highest ESCS quartile were significantly more likely to report that they had been taught how to detect whether information is subjective or biased than students in the lowest ESCS quartile (+7%). A similar pattern was observed on average across OECD countries (+8%) and across many of the 22 EU countries in PISA 2018 (OECD, 2021).

Across OECD countries, the opportunity for students to learn in school how to detect whether information is subjective or biased is strongly associated with their capacity to distinguish facts from opinions in the PISA reading assessment (R^2=0.46) (OECD, 2021), though it might be noted that this conclusion is based on a single item assessing students' ability to distinguish fact from opinion.

In their report on students' digital reading strategies in PISA 2018, the OECD (2021) highlighted relationships between students' digital navigational skills and their reading performance. Based on a multiple-text-sources reading unit that included a blog, a book review and an article from a science magazine, it was noted that:

- 62% of students in Ireland engaged in limited or no navigation, such as clicking on hyperlinks, compared to 68% on average across OECD countries;
- 14% of students in Ireland actively explored the whole reading unit in both single- and multiple-source environments (i.e., they checked different accessible pages beyond item requirements to complete the task) compared to 11% at the OECD average;
- Boys in Ireland were more likely to use hyperlinks than girls (+8%) and students in Ireland who clicked on hyperlinks twice scored 31 points higher on the PISA reading assessment, compared with students who never clicked on hyperlinks (OECD average = 33 points);
- In Ireland, 2.4% of students used the copy and paste function at least once in the unit compared to an OECD average of 9.2%. Students in Ireland who used the copy and paste function scored an average of 55 points higher on the PISA reading assessment (OECD average = 19 points).

3.3.6 Teacher-directed instruction

Students in PISA 2018 were asked about the structure and elements of their language (English/Irish in Ireland) lessons (Table 3.19). About three in four students (74.7%) reported that, in every class or in most classes, the teacher 'asks questions to check whether we have understood what was taught'. More than one quarter of students (28.6%) reported that their teacher, at the start of a lesson, summarises the previous lesson. Higher proportions reported that their teacher 'sets clear goals for our learning' (62.2%), and that that their teacher 'verbally tells us what we have to learn' (71.2%).

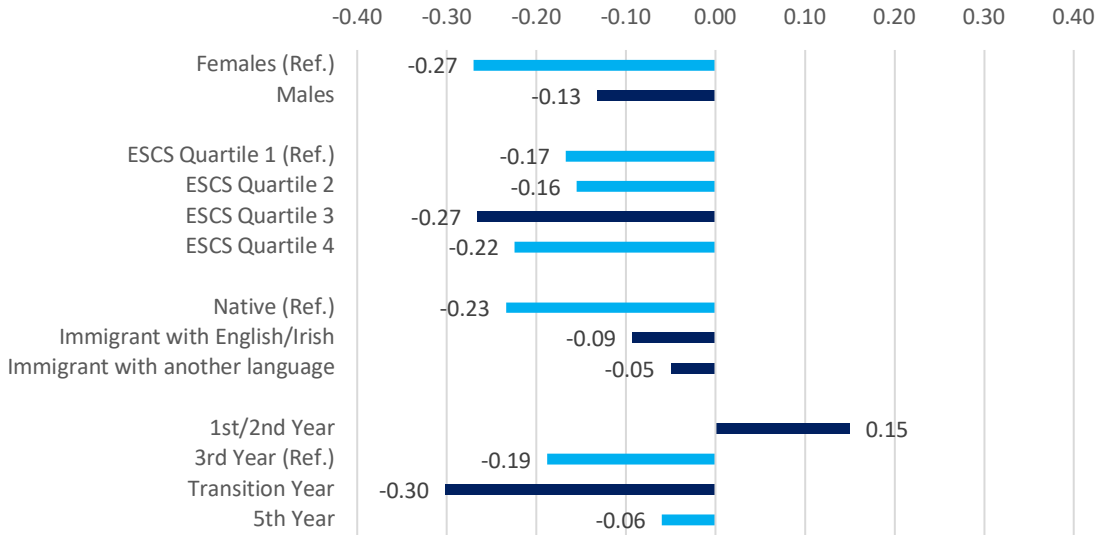
Table 3.19: Percentage of students who report that their teachers implement the following activities in English classes in 'every class' or 'most classes',

Percentage of students who report that the following things happen in their English classes:	All Students	
	%	SE
The teacher sets clear goals for our learning	62.2	(0.95)
The teacher asks questions to check whether we have understood what was taught	74.7	(0.84)
At the beginning of a class, the teacher presents a short summary of the previous class	28.6	(0.81)
The teacher tells us what we have to learn	71.2	(0.82)

See Appendix Table A3.23.

An index of teacher-directed instruction was constructed by the OECD with a mean score of 0.01 and a standard deviation of 1.0. The mean score for Ireland, -0.20, is significantly below the OECD average, which suggests that students perceived their teachers to provide teacher-directed instruction less frequently than the average student across OECD countries. The mean score of First/Second year (0.14) is the only score above the overall OECD average across any of the subcategories (Figure 3.12).

Figure 3.12: Mean scores on the index of teacher-directed instruction by gender, ESCS quartiles, immigrant and language status and year



See Appendix Table A3.28. Significant differences in **darker bars**.

The correlation between reading achievement and teacher-directed instruction is -0.10, which indicates a weak link between teaching directed instruction and reading achievement, with those getting most direct instruction tending to be weaker readers (or vice versa) (Appendix Table A3.29).

3.3.7 Adaptation of instruction

In 2018, a new question was developed where students were asked to indicate how often their teachers adapted their lessons to the needs of the students. Table 3.20 shows the percentages who reported that various actions took place in every lesson or almost every lesson, or in many lessons. Over half of students reported that the teacher 'adapts the lesson to the class's needs and knowledge' (54.2%) and 'provides individual help when a student has difficulties' (54.6%). More than one third of students (38.6%) reported that the teacher 'changes the structure of the lesson on a topic that most students find difficult to understand'.

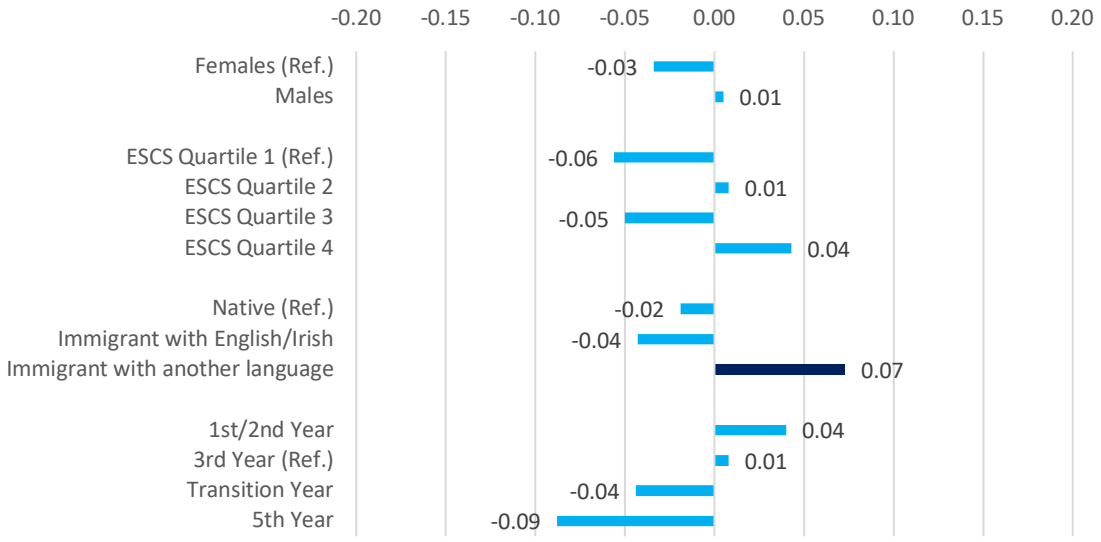
Table 3.20: Percentage of students who report that the following actions occur in English lessons in 'every lesson or almost every lesson' or in 'many lessons'

Percentage of students who report that the following things happen in their English classes:	All Students	
	%	SE
The teacher adapts the lesson to my class's need and knowledge	54.2	(0.83)
The teacher provides individual help when a student has difficulties	54.6	(0.92)
The teacher changes the structure of the lesson on a topic that most students find difficult to understand	38.6	(0.74)

See Appendix Table A3.24.

An index of adaptive instruction was constructed by the OECD using students' responses to the above statements with a mean score of 0.00 and a standard deviation of 1.0. The mean score for Ireland was -0.01, which is just below the OECD average. Across gender, ESCS quartile, immigrant and language status and year, there was little variation in mean scores (Figure 3.13). By year, the mean score decreased as the year increased (0.04 in First/ Second year, 0.01 in Third year, -0.04 in Transition year and -0.09 in Fifth year).

Figure 3.13: Mean scores on the index of teacher adapted instruction by gender, ESCS quartile, immigrant and language status and year



See Appendix Table A3.28. Significant differences in **darker bars**.

The correlation between the index of teacher adapted instruction and reading achievement is 0.09, which indicates a weak link between teachers' adaption of instruction and reading achievement (Appendix Table A3.29).

3.3.8 Perceptions on feedback from English teachers

In addition to providing guidance and encouragement to students in performing a task, teachers can help improve student outcomes by giving them feedback on how well they did on that task (Lipko-Speed, Dunlosky & Rawson, 2014; Tunstall & Gipps, 1996). Students were asked to indicate how often the following activities occur in English lessons: 'the teacher gives me feedback on my strengths in this subject', 'the teacher tells me in which areas I can still improve' and 'the teacher tells me how I can improve my performance'. Approximately half of students responded that these occurred in many or almost all/all lessons, with frequencies of 47.1%, 54.8% and 53.5% respectively (Table 3.21).

Table 3.21: Percentage of students who report the occurrence of teacher feedback activities in English lessons in 'every lesson or almost every lesson' or 'many lessons'

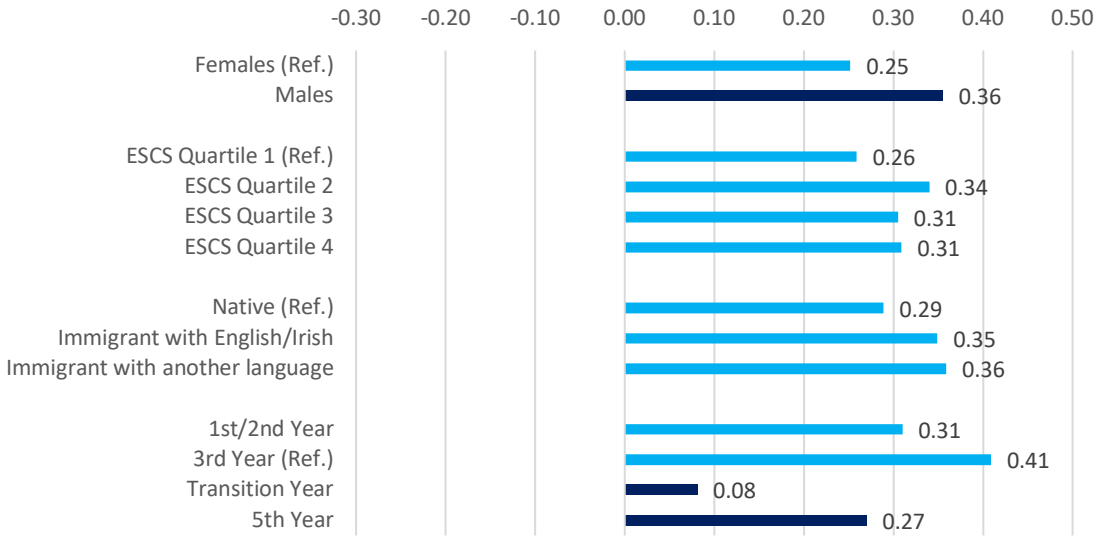
Percentage of students who report that the following things happen in their English classes:	All Students	
	%	SE
The teacher gives me feedback on my strengths in this subject	47.1	(0.89)
The teacher tells me in which areas I can still improve	54.8	(0.87)
The teacher tells me how I can improve my performance	53.5	(0.87)

See Appendix Table A3.25

Students' answers were combined by the OECD to create the index of teacher feedback whose average is 0.01 and standard deviation is 1.0 across OECD countries. Higher values in the index mean that students perceive that their teacher provides feedback more

frequently (OECD, 2019d). The mean score in Ireland for the index was 0.30, which is well above the OECD average of 0.01. In all subcategories, mean scores were all positive, with the lowest mean score reported by Transition years (0.08) (Figure 3.14), perhaps reflecting that different feedback processes may be in use during Transition year.

Figure 3.14: Mean score of the index of teacher feedback by gender, ESCS quartiles, immigrant and language status and year



See Appendix Table A3.28. Significant differences in **darker bars**.

The correlation between the index of teacher feedback and reading achievement is 0.04, indicating little or no link between the presence of teacher feedback and reading achievement (Appendix Table A3.29).

3.3.9 Teachers' stimulation of reading

Students were asked to indicate how often different activities to stimulate reading were completed in English classes. Table 3.22 shows the percentage of students who reported that these activities occurred in most or every English class in 2009 and 2018. Similar proportions reported that the teacher 'encourages students to express their opinion about a text' in both years (63.2% and 63.1% respectively). However, the proportion of students who reported that the teacher 'helps students relate the stories they read to their lives' and that the teacher 'shows students how the information in texts builds on what they already know' increased significantly from 2009 to 2018 (Table 3.22). There was no comparable variable in 2009 for 'the teacher asks questions that motivate students to participate actively' but over half of students (58.4%) reported in 2018 that this occurred in most or every class. The breakdown in proportion in 2018 by gender, ESCS quartile, immigrant and language status and grade is provided in Appendix Table 3.26.

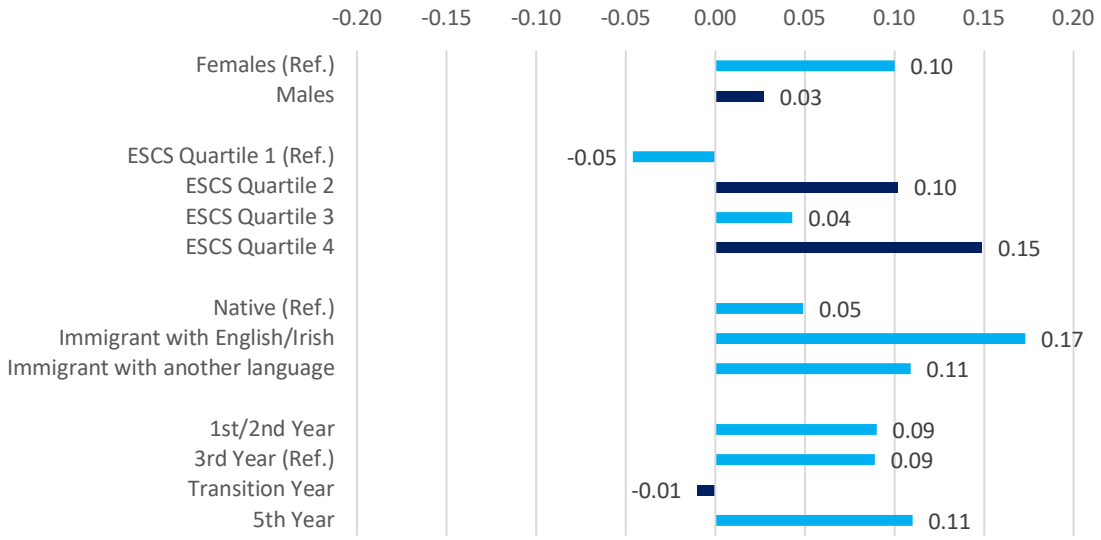
Table 3.22: Percentage of students who report that their teachers undertake various activities to stimulate reading in 'every class' or 'most classes' in English classes in 2009 and 2018

Percentage of students who report that the following activities to stimulate reading happen in their English classes:	2009		2018 (Ref.)	
	%	SE	%	SE
The teacher encourages students to express their opinion about a text	63.2	(0.86)	63.1	(0.77)
The teacher helps students relate the stories they read to their lives	**29.0**	(0.88)	39.0	(0.76)
The teacher shows students how the information in texts builds on what they already know	**45.7**	(0.90)	55.6	(0.78)
The teacher asks questions that motivate students to participate actively	No comparable question		58.4	(0.85)

See Appendix Table A3.27. Significant differences in **bold**.

The index of teachers' stimulation of reading engagement was constructed by the OECD based on the statements above. Positive values on this scale mean that the students perceived their teacher to provide greater stimulation than did the average student across OECD countries (OECD, 2019d). The mean score in Ireland was 0.06, just above the OECD average (0.00). Figure 3.15 shows the mean scores by gender, ESCS quartile, immigrant and language status and year. In the majority of cases, the value was above the overall OECD average, apart from ESCS quartile 1 (-0.05) and Transition year (-0.01).

Figure 3.15: Mean scores of students in Ireland on the index of teacher's stimulation of reading by gender, ESCS quartiles, immigrant and language status and year



See Appendix Table A3.28. Significant differences denoted by **darker bars**.

The correlation between teacher's stimulation of reading and reading achievement is 0.13, which indicates a weak association between teachers' stimulation of reading for enjoyment and reading achievement (Appendix Table A3.29).

3.4 LEARNING ENVIRONMENT IN ENGLISH CLASSES

Interactions between students and their teachers play a crucial role in students' learning and in shaping their feelings towards school (OECD, 2019d). Students who feel supported by their teachers feel more motivated about school and perform at higher levels (Pitzer & Skinner, 2017; Ricard & Pelletier, 2016). This section examines aspects of the learning environment in English lessons not already considered - general teacher support in English lessons, emotional support and length of texts used in English lessons. In all cases, the data refer to English lessons only and are based on the views of students, as relayed through the PISA student questionnaire.

3.4.1 Teacher support in English lessons

Students were asked a range of questions about their teacher's actions and behaviours in English lessons (Table 3.17). Most students (81.1%) reported that their teacher helped them with their learning. Similar proportions were reported for 'the teacher shows an interest in every student's learning' (76.4%), 'the teacher gives extra help when students need it' (74.8%) and 'the teacher continues teaching until the students understand' (73.7%). Students in Junior Cycle (First/Second and Third years) reported higher proportions in all instances than Transition years and Fifth years, indicating that the younger students felt they received more support from their teachers (Appendix Table A3.20).

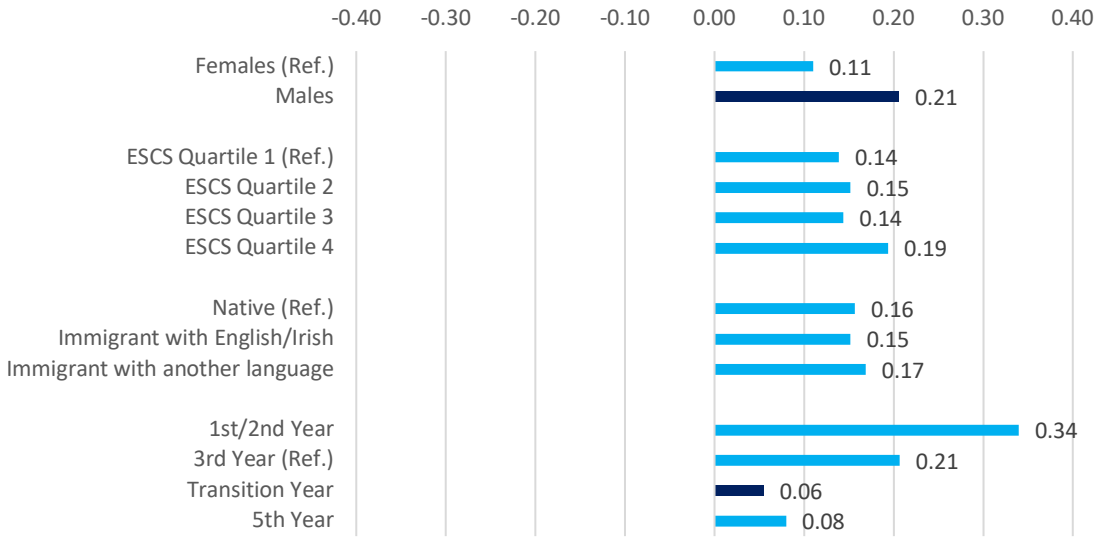
Table 3.17: Percentages of students in Ireland who reported that their teachers support them in various ways in English classes in 'every class' or 'most classes'

Percentage of students who report that the following things happen in their English classes:	All Students	
	%	SE
The teacher shows an interest in every student's learning.	76.4	(0.72)
The teacher gives extra help when students need it	74.8	(0.81)
The teacher helps students with their learning	81.1	(0.62)
The teacher continues teaching until the students understand	73.7	(0.77)

See Appendix Table A3.20.

An index of teacher support was constructed by the OECD with a mean score of 0.00 and a standard deviation of 1.0 (OECD, 2019d). The mean score for Ireland was 0.16, which is above the OECD average and suggests that students perceived their teacher to support them more frequently than the average student across OECD countries. The mean score of males (0.21) in Ireland was significantly above that of females (0.11) (Figure 3.11). First/Second years reported the highest mean score by year (0.34) while Transition year students reported the lowest (0.06).

Figure 3.11: Mean score of the index of teacher support by gender, ESCS quartiles, immigrant and language status and year



See Appendix Table A3.28. Significant differences denoted by **darker bars**.

The correlation between reading achievement and the index of teacher support is 0.02 which is not significant and indicates little or no link between reading achievement and perceived teacher support.

In addition, students were asked the extent to which they agreed with the following statements regarding their past two English lessons, 'the teacher made me feel confident in my ability to do well in the course', 'the teacher listened to my view on how to do things' and 'I felt the teacher understood me' (Table 3.18). Students reported high levels of emotional support from their English teachers with 78.1% reporting that their teachers made them confident in their ability to do well, 72.1% that they felt that their views were listened to and 76.1% that they felt understood. These proportions are all above the corresponding OECD averages (71%, 67% and 70% respectively). No index based on these questions was created by the OECD.

Table 3.18: Percentage of students in Ireland who 'agree' or 'strongly agree' with various statements about the last two English lessons

Percentage of students who 'agree' or 'strongly agree' that…	All Students	
	%	SE
The teacher made me feel confident in my ability to do well in the course	78.1	(0.70)
The teacher listened to my view on how to do things	71.5	(0.76)
I felt that my teacher understood me	75.6	(0.69)

See Appendix Table A3.21.

3.4.2 Length of texts in English lessons

Students were asked how many pages the longest piece of text was that they had to read for their English lessons in 2018. More than one third (36.4%) reported that the longest piece of text was between one and ten pages and these students achieved a mean reading score of

494.5 (Table 3.13). A higher proportion, 42.4%, reported reading more than 100 pages and they had a significantly higher mean score of 546.3. Students who reported reading between 11-100 pages had a mean reading score of 506.6, also significantly above the 1-10 category. Significantly more females (44.1%) than males (40.7%) reported having read more than 100 pages (Table 3.19). In the more-than-100-pages category, there were differences by ESCS with those in the lower quartiles represented by lower proportions (36.4% in quartile 1 and 39.8% in quartile 2) and those in higher quartiles by higher proportions (41.9% in quartile 3 and 51.4% in quartile 4) (Appendix Table A3.22). Third years reported the highest proportion in the more-than-100-pages category (48.3%) with the lowest proportion reported by Transition years (30.7%), followed by First/Second years (33.3%).

Table 3.19: Percentages and mean reading scores of students by longest piece of text they have read in their English lessons, and by gender

How many pages was the longest piece of text you had to read for your English lessons?	All Students		Females		Males	
	%	MR	%	MR	%	MR
1-10 pages (Ref.)	36.4	494.5	34.2	509.5	38.6	481.1
11-100 pages	21.2	506.6	21.8	514.2	20.7	498.6
More than 100 pages	42.4	546.3	44.1	554.6	40.7	537.3

See Appendix Table 3.22.

3.5 SUMMARY

This chapter examined students' reading habits and strategies and reading achievement in Ireland in PISA 2018. Where possible, comparisons were made with PISA 2009. Key findings from the student questionnaire were presented related to four themes: engagement in reading; diversity of reading materials/self-perceptions of reading ability; reading and learning strategies; and the learning environment in English classes.

Engagement in Reading

In 2018, nearly half of students reported that they did not read for enjoyment at all. Significantly more males (56.1%) than females (39.4%) reported that they did not read for enjoyment. Students who did not read at all for enjoyment had a mean reading score (484.1) that was significantly lower than the mean scores of students who engaged in reading for enjoyment with varying frequency, with more frequent engagement associated with higher mean scores. Since 2009, the proportion of students reading for enjoyment has decreased significantly, which is a reason for concern, given the positive association between engagement and reading performance.

When presented with five statements relating to enjoyment of reading (sometimes referred to as attitude to reading), over half of students reported that they 'read only if I have to' (51.5%) and 'read only to get the information I need' (52.0%). Less than one third reported that 'reading is one of my favourite hobbies'. Conversely, over one quarter (26.8%) reported that 'reading is a waste of time'. Females responded more positively to reading than males. Similar to the frequency of reading for enjoyment, since 2009, the percentage of students agreeing with positively-worded statements about reading has decreased, while percentages agreeing

with negatively-worded statements has increased. An index of enjoyment of reading was constructed for PISA 2018 based on the statements discussed. The mean score for Ireland was -0.07, which indicates a level of enjoyment similar to the OECD average (-0.06).

Diversity of Reading Materials and Self-perceptions of Reading Abilities

In PISA 2018, when asked about the format in which they read, over one third reported that they read books more often in paper format (33.7%). Similar proportions reported reading books most often on digital devices (12.0%) and on both paper and digital devices (13.7%). Two fifths of students reported that they rarely or never read books in any format (40.7%).

Exploring the materials students read by choice, fiction and newspapers were read most frequently (12.5% reported that they read fiction several times a week by choice, while 9.1% said they read newspapers). Magazines (3.0%), comic books (2.4%) and non-fiction books (5.0%) were reported to be read less often. In all cases, the proportions have decreased since 2009, with magazines decreasing significantly from 23.5% in 2009 to 3.0% in 2018, fiction from 14.3% in 2009 to 12.5% in 2018 and newspapers from 41.2% in 2009 to 9.1% in 2018.

When reading in school, over one third of students reported that they read texts that included diagrams or maps and texts that included tables or graphs. A lower proportion (27.9%) reported to read fiction but only 13.2% reported reading digital texts including links.

When asked about reading online, the proportions for almost all categories were significantly higher in 2018 than in 2009. The most substantial change was seen in chatting online with an increase from 27.4% in 2009 to 85.2% in 2018. The other categories for which a significant increase was reported were reading online news, searching information online to learn about a topic, taking part in an online group discussion or forum and searching for practical information online. Reading emails was the only online category for which a significant decrease was reported – from 13.7% in 2009 to 7.0% in 2018.

In relation to the use of a digital device for English homework, 70.0% reported using one less than once a week in 2018, 17.0% used one once or twice a week, 8.8% did so on most days and 4.2% did so every day.

When asked about their reading abilities, similar proportions reported that 'I am a good reader' (79.6%), 'I read fluently (74.1%) and 'I can understand difficult texts' (72.7%). An index was created by the OECD from these statements and the mean score for Ireland was 0.12, which is above the corresponding OECD average (0.00). In Ireland, the correlation between scores on the index and achievement was 0.49. Three other statements related to perceptions of reading difficulty. Lower proportions reported that 'I have to read a text several times before I completely understand it (41.1%), 'I find it difficult to answer questions about a text' (25.0%) and 'I have always had difficulty with reading' (18.4%). Another index was created by the OECD from this set of statements. The mean score for Ireland was 0.00 which is similar to the OECD average (0.01). The correlation between scores on the index and reading performance in Ireland is -0.39.

Reading and Learning Strategies

In 2018, the most strongly endorsed strategies by students in Ireland when understanding and remembering a text were 'underlining important parts in the text' (53.0%) and 'summarising the text in my own words' (49.3%). However, these strategies were more strongly endorsed in 2009 than in 2018. On a related index of understanding and remembering, Ireland's mean score was 0.06, which is significantly above the OECD average of -0.01, but below Ireland's 2009 mean score of 0.16. The correlation between scores on the index of understanding and remembering and reading achievement is 0.28, which is significant.

For summarising texts, higher-order strategies such as 'I read through the text, underlining the most important sentences. Then I write them in my own words as a summary' and 'I carefully check whether the most important facts in the text are represented in the summary' were more strongly endorsed than lower-order strategies, but again, to a somewhat lesser extent than in 2009. On the index for summarising a text, the mean score was 0.10, which is significantly above the OECD average (0.00) but below the mean score in 2009 (0.14). The 2018 correlation between reading and achievement and the index of summarising information is 0.39.

Students in Ireland more strongly endorsed appropriate strategies for assessing quality and credibility of sources than did students on average across OECD countries. Strategies such as 'checking the sender's email address' and 'deleting the email without clicking the link' were more strongly endorsed compared with strategies such as 'clicking on the link to fill out the form as soon as possible'. The mean score on the index of assessing credibility of sources for students in Ireland was 0.21, which is significantly above the OECD average (0.00). The correlation between reading and achievement and the index of assessing credibility of sources is 0.46.

In relation to post-reading activities in school, high proportions of students reported that, after reading a book or book chapter, their teachers usually ask them to 'answer questions about the book or the chapter' (87.4%), 'list and write a short description of the main characters' (85.3%), 'give your personal thoughts about the book or the chapter' (85.1%) and 'write a summary of the books or the chapter' (78.0%). 'Compare the context of the book or the chapter with your own experience' was reported by the fewest students (33.8%).

When asked about strategies for online reading and study, most students reported that they had been informed about the consequences of making information publicly available online (83.1%). Just one quarter of students had been taught how to detect phishing or spam emails (28.0%).

Learning Environment in English Classes

High proportions of students in Ireland reported that 'the teacher helps students with their learning' (81.1%) in English classes. On an index based on four such items, students perceived their teacher to support them more frequently (0.16) than the average student across OECD countries (0.00). The correlation between the index of teacher support and reading achievement is 0.02, which is not significant. In relation to the past two English lessons, most students reported that they felt listened to (71.5%) and understood by their teacher (75.6%) and that teachers helped improve students' confidence in their ability (78.1%).

Fewer than half of students indicated that the longest piece of text they read in English lessons was more than 100 pages while over one third of (36.4%) reported that the longest piece of text was between one and ten pages. More females reported reading longer texts than males.

Most students reported that the teacher of their English class asked questions to assess their understanding (74.7%) and told them what they have to learn (71.2%). Fewer students, 28.6%, reported that the teacher begins the lesson by summarising the previous lesson. Based on an OECD-constructed index, students in Ireland perceived their teacher to provide teacher-directed instruction less frequently (-0.20) than the average student across OECD countries (0.00). The correlation between teacher-directed instruction and reading achievement is -0.10, which is significant.

Students in Ireland were asked to report on whether their English teachers adapted their instruction based on the needs of the class. Just over half of students reported that the teacher adapted the lesson (54.2%) or provided individual help when a student has a difficulty (54.6%). In Ireland, students perceive their teacher to adapt their instruction (-0.01) at about the same level as the average student across OECD countries (0.00), based on an index of adaptive instruction. The correlation between the index of adaptive instruction and reading achievement is 0.09.

When asked about teacher feedback, similar proportions of students reported that the teacher gave them feedback on their strengths (47.1%), showed them in what areas they can improve (54.8%), and showed them how they can achieve an improvement (53.5%). Students in Ireland perceived that they receive more feedback (0.30) than the average student across OECD countries (0.01) based on the perceived feedback index. The correlation between reading achievement and the index of perceived feedback is just 0.04.

With student engagement in reading falling in many countries, students were asked to report on how often their teachers engaged in activities to stimulate reading in English lessons. Over half of students reported that 'the teacher encourages students to express their opinion about a text' (63.1%), 'the teacher asks questions that motivate students to participate actively' (58.4%) and 'the teacher shows students how the information in texts build on what they already know' (55.6%) in most or all classes. Based on the index for stimulation of reading, students in Ireland perceive that their teachers stimulate the enjoyment of reading more (0.06) than the average student across OECD countries (0.00). The correlation between reading achievement and the index of stimulation of reading is 0.13.

Chapter 4 – Home Background, Parental Support and Participation in Education

There are many potential overlapping influences on students' PISA reading achievement scores, ranging from personal characteristics, such as reading strategies used (described in Chapter 3), to the particular familial, cultural and socio-economic environments of individuals. The contextualisation of student achievement beyond individual traits is an important part of PISA. The PISA 2018 national report (McKeown et al., 2019) reported on significant differences in reading achievement associated with varying school types and levels of advantage/disadvantage. Other potential influences on reading achievement, emanating from the home environment, are explored in this chapter. These are referred to collectively as 'home background' influences. Students' reading literacy achievement may be influenced both directly and indirectly via the economic, social and cultural environment including resources available at home as well as behaviours and attitudes modelled or encouraged by parents/guardians. Over time, such factors can influence students' opportunities to develop reading literacy skills as well as help to shape attitudes to and engagement with reading.

This chapter focuses on relationships between reading achievement and information collected from the PISA parent questionnaire, along with information provided by students on their home background through the various student questionnaires described in Chapter 1 of this report. Again, variables in this chapter are re-examined in Chapter 7 in the context of multi-level models of reading achievement, where associations with other variables are controlled for.

4.1 BACKGROUND ECONOMIC, SOCIAL AND CULTURAL FACTORS

This section examines student performance in reading literacy in relation to various socio-cultural and economic background variables. Initially, the Economic Social and Cultural Status (ESCS) index is explored as well as the different indices which are combined to make up the ESCS index. Finally, parents' enjoyment of reading is explored in relation to students' performance.

4.1.1 Economic, social and cultural status

Students' economic, social and cultural status (ESCS) is a known predictor of student achievement and is associated with significant differences in student performance across many PISA countries and economies (OECD, 2016a). In each PISA cycle, an index of economic, social and cultural status (ESCS) is created for each student using related socio-economic indicators. In PISA 2018, the ESCS index[20] was derived from three variables

20 In 2018, there were limited changes made to improve the measure of ESCS, including equal weighting of all components, scores assigned to parents in education, in receipt of welfare, or at home (previously treated as missing), and country-specific parameters assigned for several international home possession items.

related to family background: parents' highest occupational status, parents' highest level of education and home possessions. Higher scores on the ESCS index indicate higher student economic, social and cultural status. Table 4.1 presents the mean scores in reading for students in each ESCS quartile. Students in the lowest quartile had a mean reading score of 482.3.[21] The mean reading score increases as the quartiles increase with all other quartiles significantly above the lowest quartile.

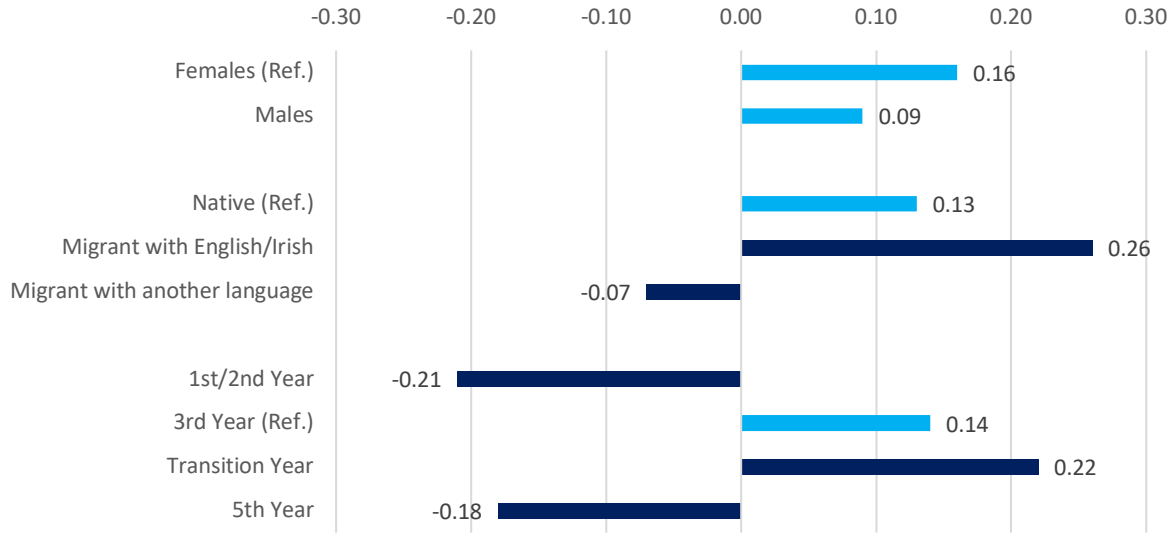
Table 4.1. Mean scores on reading by ESCS quartiles

	MR	SE	Mean ESCS
ESCS: Quartile 1 Lowest (Ref.)	482.3	(3.00)	-1.01
ESCS: Quartile 2 Low – Medium	**510.0**	(3.03)	0.16
ESCS: Quartile 3 Medium – High	**527.4**	(2.86)	0.50
ESCS: Quartile 4 Highest	**556.7**	(2.99)	1.19

Significant differences in **bold**.

In Ireland, the overall mean score on the index of ESCS was 0.13, which was above the OECD average on the ESCS index of -0.03. The mean ESCS in Ireland has increased significantly since 2009 when it was -0.01 (Appendix Table A4.1). Females had a higher mean ESCS score than males (Figure 4.1), though the difference was not significant. Immigrant students who speak English/Irish at home had a significantly higher mean ESCS score (0.26) than native students (0.13) while immigrant students who speak a language other than English/Irish at home reported a significantly lower mean ESCS score than native students (-0.07) (Figure 4.1). The mean ESCS score in Third year (0.14) was significantly higher than that in First/Second year (-0.21) or in Fifth year (-0.19), while the mean ESCS score of those in Transition year (0.22) was significantly higher than in Third year.

Figure 4.1. Mean scores of students in Ireland on the index of economic, cultural and social status (ESCS) by gender, immigrant and language status and year



See Appendix Table A4.18. Significant differences denoted by **darker bars**

21 These mean scores differ slightly from those reported in Table 3.11 in McKeown et al. (2019), as quartiles were re-computed for this report, and students on the border between quartiles were randomly allocated in a slightly different way.

The correlation between student ESCS and reading achievement is 0.33 which indicates a moderately strong link. The correlation (and all others reported in this chapter) is statistically significant) (Appendix Table A4.19).

A measure of socio-economic status at the school level is the school mean ESCS. Table 4.2 presents the mean score in reading for students in each of the school mean ESCS quartiles (with individual students assigned the ESCS quartile in which their school fell). Students in the lowest school ESCS quartile had a mean reading score of 476.8. Students in quartile 2 (515.2), quartile 3 (527.1) and quartile 4 (553.0) achieved significantly higher scores than those in quartile 1.

Table 4.2. Mean scores on reading by school mean ESCS quartiles

	MR	SE
School Mean ESCS: Quartile 1 Lowest (Ref.)	476.8	(3.94)
School Mean ESCS: Quartile 2 Low – Medium	515.2	(3.63)
School Mean ESCS: Quartile 3 Medium – High	527.1	(3.59)
School Mean ESCS: Quartile 4 Highest	553.0	(3.57)

Significant differences in **bold**.

Another measure of school SES relates to whether or not a school was in the Department of Education's DEIS scheme (DES, 2017b) at the time of the PISA 2018 assessment. Gilleece et al. (2020) reported that students in DEIS schools scored at the level of the OECD average for reading literacy (479.2) while students in non-DEIS schools achieved significantly above the OECD average (530.4). The difference between the average reading performance of students attending DEIS school and those attending non-DEIS schools (51.2 points) is statistically significant (Gilleece et al., 2020).[22]

4.1.2 Parental occupation

One of the three variables used to create ESCS was parental occupation. Parental occupation was derived from questions asked as part of the Student Questionnaire. Students were asked what their parents' jobs were and what they did in their jobs. The responses to these questions were combined to identify each parent's occupation. Occupations were coded to four-digit ISCO codes (ILO, 2012), and then mapped to the international socio-economic index of occupational status (Ganzeboom, 2010). In PISA, parental occupation scores correspond to the higher score of either parent or to that of the only available parent.

In Ireland, the mean score for parental occupation was 52.7 which is just above the OECD average (52.3). This is significantly higher than the mean score for Ireland reported in 2009 (49.9) (Appendix Table A4.1). The correlation between parental occupation and reading achievement is 0.27, which indicates a moderately strong link between these two variables (Appendix Table A4.19).

22 Section 5.1.2 in this report examines the performance of students in DEIS schools on reading literacy, with reference to the targets for DEIS schools set out in the Interim Review of the National Literacy and Numeracy Strategy (DES, 2017a).

4.1.3 Parental education

The second variable used to create the ESCS index was parental education. As part of the Student Questionnaire, students were asked about the highest level of schooling completed by their parents and which other qualifications they held. The responses were classified according to the International Standard Classification of Education (ISCED) (OECD, 2009) and recoded into estimated years of schooling completed. As before with parental occupations, the index is based on the higher score of either parent or to that of the only available parent.

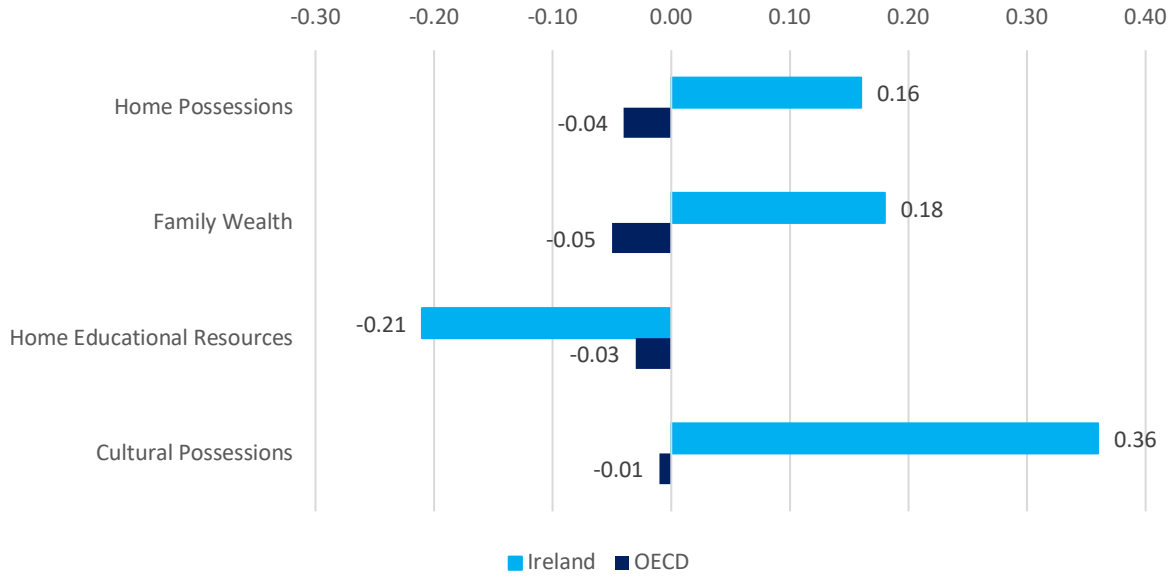
The mean score for parental education in Ireland was 14.1 indicating that, on average, parents completed over 14 years of schooling. This is slightly above the OECD average of 13.8 and significantly above the estimate for Ireland in 2009 (13.3) (Appendix Table A4.1). The correlation between parental education and reading achievement is 0.21, which indicates a weak-to-moderate link between the number of years of parental education and student reading achievement (Appendix Table A4.19).

4.1.4 Home possessions

The third and final variable used to create the ESCS index was home possessions. In PISA 2018, students reported on the availability of 16 household items at home including three country-specific household items that were seen as appropriate measures of family wealth within the country's context (OECD, 2019c). In addition, students reported the numbers of possessions (such as mobile phones with internet access) and books in the home. Home possessions is a summary index of all household and family wealth items (OECD, 2019c).

In Ireland, the mean score for home possessions was 0.16 which is well above the OECD average of -0.04, indicating that students have more home possessions than the average student across OECD countries (Figure 4.2). Additionally, this has significantly increased from -0.09 in 2009 when Ireland was just above the OECD average of -0.10 (Appendix Table A4.1). There was a weak-to-moderate correlation (0.25) between home possessions and reading achievement in 2018 (Appendix Table A4.19).

Figure 4.2. Mean score on the indices of home possessions, wealth, home educational resources and cultural possessions in Ireland and on average across OECD countries



See Appendix Table A4.1. All mean scores for Ireland are **significantly different** from the corresponding OECD averages.

Other indices relating to family wealth, home educational resources and cultural possessions were also created from elements of the three questions. While these indices were not used directly to create the home possessions index, they did contribute to the home possessions index and are explored individually below.

Family Wealth

A family wealth index was created by the OECD using elements of two questions asked in the Student Questionnaire. In the first question, students were asked whether they had any of the following in their home: a room of your own, a link to the internet, your own MP3 player, your own laptop/table and your own smartphone. The second question asked students to indicate how many of the following there were in their home: televisions, cars, rooms with a bath or shower, mobile phones with internet access, computers, tablet computers and e-book readers.

The mean score in Ireland in 2018 was 0.18, which is significantly above the OECD average (-0.05) (Figure 4.1). This is significantly above the 2009 mean score of 0.03 for wealth (Appendix Table A4.1). The correlation between wealth and reading achievement is 0.05 which shows that, in Ireland, there is little or no link between reading achievement and wealth as measured by the PISA family wealth index (Appendix Table A4.19).

Home educational resources

Students were asked to indicate whether they had the following in their home: a desk to study at, a quiet place to study, a computer they could use for school work, educational software, books to help with their school work, technical reference books and a dictionary. These were combined to create the home educational resources index.

In Ireland, the mean score for home educational resources was -0.21, which is significantly below the OECD average of -0.03 (Figure 4.1). The mean score in Ireland has significantly decreased from 2009 when the mean score was -0.03 (Appendix Table A4.1). The correlation between home educational resources and reading achievement is 0.14, which indicates a weak-to-moderate relationship between the presence of home educational resources (as defined by PISA) in the home and achievement in reading (Appendix Table A4.19).

Cultural possessions at home

The cultural possessions index was derived from two questions asked as part of the Student Questionnaire. The first asked students to indicate whether they had classic literature, books of poetry, works of art and books on art, music or design. The second question asked students to report how many musical instruments they had in their home.

The mean score for cultural possessions in 2018 was 0.36, which is substantially and significantly above the OECD average of -0.01 (Figure 4.1). This has also increased significantly from 0.02 in 2009 (Appendix Table A4.1). This indicates students in Ireland have more cultural possessions such as literature, art and musical instruments than the average student across OECD countries. The correlation between cultural possessions and reading achievement is 0.24, which indicates a weak-to -moderate link between reading achievement and the presence of cultural possessions in the home (Appendix Table A4.19).

Number of books in the home

On the Student Questionnaire, students were also asked to indicate how many books were in their home and this variable contributed to the home possessions index.[23] The percentages are reported for four categories here: 0-10 books, 11-100 books, 101-500 books and more than 500 books. Table 4.3 reports the percentage and mean reading score of students for each of these categories. Just under half of students reported that they had between 11 and 100 books in their home while a third reported having between 101 and 500 books. More than one in 10 students reported having between 0 and 10 books. The mean reading score for this group of students was 449.5, which was significantly lower than mean reading scores of students in all other categories of numbers of books in the home. The mean reading score increases as the number of books increases, with a gap of 120.1 score points between the lowest (0-10 books) and the highest (500+ books) categories.

Table 4.3. Percentages of students by how many books are in their home.

How many books are in your home?	%	SE	MR	SE
0-10 books (Ref.)	13.5	(0.70)	449.5	(3.44)
11-100 books	48.4	(0.83)	**507.7**	(2.17)
101-500 books	32.0	(0.97)	**555.4**	(2.41)
More than 500 books	6.1	(0.38)	**569.6**	(5.93)

See Appendix Table A4.2. Significant differences in **bold**.

23 For the inclusion in the home possessions index, the categories were recoded to provide national averages as follows: 0-10 books was recoded as 5 books, 11-25 books to 18 books, 26-100 books to 63 books, 101-200 books to 150.5 books, 201-500 books to 350 books, and more than 500 books to 750.5 books.

The number of books in the home differs greatly across ESCS quartiles with only 1.2% of students in the lowest quartile indicating that they have more than 500 books in comparison with 15.3% in the highest quartile (Appendix Table A4.2).

In PISA 2009, 13.8% of students in Ireland reported that they had 0-10 books, 44.9% reported having 11-100 books, 33.8% had 101-500 books, and 7.4% had more than 500 books (PISA 2009 database). Hence, there is little change in the numbers of books students reported having between 2009 and 2018.

4.2 STUDENTS' LINGUISTIC AND SOCIAL BACKGROUNDS

This section examines some other aspects of students' backgrounds including immigrant and language status, time spent in paid work, caring responsibilities in the home, and their relationship to reading achievement.

4.2.1 Immigrant and language status

Information on the country of birth of students and the language they usually spoke at home was collected in the Student Questionnaire. The two indices were combined to create three categories: native students, immigrant students who normally spoke English/Irish at home and immigrant students who normally spoke another language at home. The PISA 2018 sample comprised of 82.1% of native students who achieved a mean reading score of 522.1, 9.0% who spoke predominantly either English or Irish at home (mean reading score of 518.2), and 8.8% who spoke a language other than Irish or English at home (mean reading score of 498.5) (Table 4.4). The mean reading achievement score of immigrant students who spoke English or Irish at home did not differ from that of native students. However, the mean reading score of immigrant students who spoke a language other than English or Irish at home was significantly lower, by almost one quarter of a national standard deviation, than the mean score of native students.

Table 4.4. Percentages and mean reading scores of students by immigrant and language status

	%	SE	MR	SE
Native (Ref.)	82.1	(0.91)	522.1	(2.26)
Immigrant with English/Irish	9.0	(0.55)	518.2	(5.17)
Immigrant with another language	8.8	(0.58)	**498.5**	(5.33)

See Appendix Table A4.3. Significant differences in **bold**.

The percentage of immigrant students in PISA speaking either English or Irish at home has doubled from 4.5% in 2009 to 9.0% in 2018. Similarly, the percentage of immigrant students speaking a language other than English or Irish at home has more than doubled, from 3.5% in 2009 to 8.8% in 2018. These increases in percentages are also generally consistent with those reported in PISA 2015 (Shiel et al., 2016, Table 6.3). The mean reading scores have increased across all categories from 2009 to 2018 with the mean reading scores of native students and of immigrants who speak a language other than English or Irish increasing significantly. While the same pattern of reading scores was observed among the three groups

in 2009 as in 2018, the gap in performance between immigrants who spoke a language other than English or Irish at home compared to native students was smaller in 2018 (59.2 points in 2009 vs 23.6 points in 2018).

Table 4.5. Percentages and mean reading scores of students by immigrant and language status in 2018 and 2009

	2009		2018	
	MR	**SE**	**MR**	**SE**
Native (Ref.)	**501.9**	(3.01)	522.1	(2.26)
Immigrant with English/Irish	499.7	(8.33)	518.2	(5.17)
Immigrant with another language	**442.7**	(11.24)	498.5	(5.33)

See Appendix Table A4.4. Significant differences in **bold**.

Looking separately by gender at differences in mean reading scores for the three immigrant/language categories in 2018 (Appendix Table A4.3), immigrant female students speaking a language other than English or Irish at home achieved a significantly lower mean score (501.6) than native female students (534.7). There was no significant difference in scores for males between these two groups.

Table 4.6 presents the mean scores on various home background indices by immigrant and language status. With the exception of family wealth, the mean scores of immigrants who speak English or Irish at home were above those of native students in all the home background indices and, in some instances, to a significant extent. Immigrants who speak a language other than English or Irish at home had lower mean scores in all the home background indices apart from home educational resources, when compared with native students.

Table 4.6. Mean scores of home background indices by immigrant and language status on economic, social and cultural factors in PISA 2018.

	Native (Ref.)		Immigrant with English/Irish		Immigrant with another language	
	Mean	**SE**	**Mean**	**SE**	**Mean**	**SE**
Economic, Social and Cultural Status	0.13	(0.03)	**0.26**	(0.05)	**-0.07**	(0.06)
Highest Parent Occupation Status	53.11	(0.56)	55.22	(1.12)	**46.68**	(1.39)
Highest Parent Education	14.11	(0.05)	**14.59**	(0.11)	13.97	(0.16)
Home Possessions	0.18	(0.05)	0.18	(0.05)	0.01	(0.06)
Family Wealth	0.22	(0.02)	0.11	(0.04)	**-0.06**	(0.04)
Home Educational Resources	-0.23	(0.02)	**-0.04**	(0.05)	-0.14	(0.05)
Cultural Possessions at Home	0.37	(0.03)	0.42	(0.06)	0.27	(0.07)

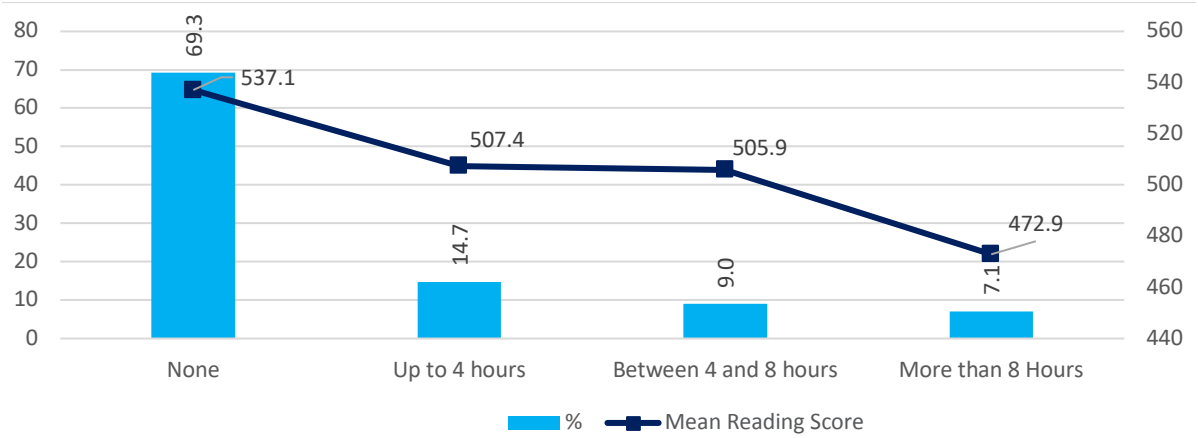
See Appendix Table A4.18. Significant differences in **bold.**

4.2.2 Time spent in paid work

As part of the Student Questionnaire, students were asked to indicate whether they engaged in paid work during term time and if so, how much time they spent in paid work. Figure 4.3 presents the percentages and mean reading score of students by time spent in paid work during term time. A pattern of lower mean reading scores in line with increasing time spent in

paid work is observed. Most students (69.3%) reported not engaging in any paid work during term time and the mean reading score for these students was 537.1. Just 14.7% reported working up to 4 hours (mean reading score of 507.4), 9.0% 4-8 hours (mean reading score of 505.9) and 7.1% more than 8 hours (mean reading score of 472.9). Students who spent any time at all in paid work during term time had significantly lower mean reading scores than students who did not work during term time (Appendix Table A4.5).

Figure 4.3. Percentages and mean reading scores of students by time spent in paid work during term time



See Appendix Table A4.5.

More students were engaged in paid work during term time in 2018 compared to 2009 (30.7% vs 25.2%) and this increase was spread across the different categories of hours worked (Appendix Table A4.6). As in 2018, the mean reading scores of students in 2009 who spent any time in paid work were significantly lower than those who did not do such work.

Gender differences in levels of participation in paid work in 2018 are also noted (Table 4.7). Over one third of males (35.8%) reported taking part in paid work in comparison to one quarter (25.7%) of females. The gender difference was most pronounced at the highest category of hours worked (more than eight hours) with boys almost three times more likely than girls to work this much.

Table 4.7. Percentages of females and males by time spent in paid work during term time

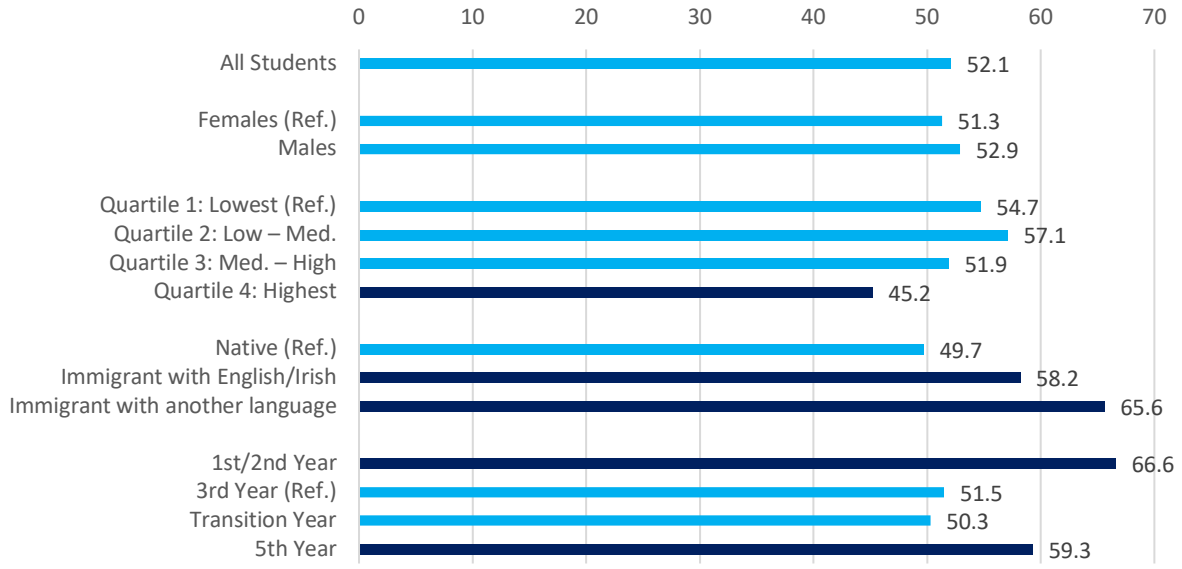
How many hours do you spend in paid work during term time?	Females (Ref.)		Males	
	%	SE	%	SE
None	74.3	(1.19)	**64.2**	(1.48)
Up to 4 hours	14.2	(0.71)	15.3	(0.76)
Between 4 and 8 hours	7.7	(0.72)	**10.3**	(0.82)
More than 8 Hours	3.8	(0.48)	**10.3**	(0.68)

See Appendix Table A4.5. Significant differences in **bold**.

4.2.3 Caring responsibilities

The Wellbeing Questionnaire asked students to indicate whether they had to look after or care for anyone on a regular basis. The question included options on whom they cared for, such as a parent, sibling, grandparent, another relative or a non-relative. A variable was created to illustrate the proportion of students with caring responsibilities for at least one of the options on a regular basis. Just over half of students (52.1%) reported having some caring responsibilities and they achieved a mean reading score of 507.5 (Figure 4.4). This is significantly below the mean score of those who reported having no caring responsibilities (549.3). There was little difference by gender, as 51.3% of females and 52.9% of males reported having some caring responsibilities. Considering immigrant and language groups, native students reported the lowest percentage (49.7%) while more immigrants who speak English/Irish at home (58.2%) and immigrants who speak a language other than English/Irish at home (65.6%) had caring duties. Students in the highest ESCS quartile were significantly less likely to report having caring responsibilities (45.2%) than those in the lowest quartile (54.7%). Compared to Third years, First/Second years and Fifth years were significantly more likely to report having caring responsibilities.

Figure 4.4. Percentage of students who had caring responsibilities on a regular basis by gender, ESCS quartile, immigrant and language status and year



See Appendix Table A4.7 for standard errors. Significant differences denoted by **darker bars**.

4.3 PARENTAL SUPPORT, READING HABITS AND STRATEGIES

4.3.1 Parents' enjoyment of reading

The Parent Questionnaire included questions relating to the parents' reading habits and attitudes. Similar to questions on the Student Questionnaire about enjoyment of reading reported on in Chapter 3, parents of students were asked about the time they spent reading for enjoyment. Table 4.8 shows the percentages of students whose parents read for enjoyment with varying frequency. The highest proportion was reported in the 'more than 1 hour a day'

category (37.8%). Thirty percent reported reading between 30 and 60 minutes a day. Only 10.7% of parents reported that they did not read for enjoyment, compared with nearly half of students (see Chapter 3, Table 3.1 and Appendix Table A4.8).

Table 4.8. Percentages of students whose parents read for enjoyment and their child's mean reading score

	%	SE	MR	SE
I do not read for enjoyment	10.7	(0.48)	**484.0**	(3.92)
30 minutes or less a day (Ref.)	21.5	(0.67)	517.7	(3.71)
30-60 minutes a day	30.0	(0.66)	525.3	(3.25)
More than 1 hour a day	37.8	(0.72)	**534.8**	(2.37)

See Appendix Table A4.8 (Significant differences in **bold**).

As with student frequency of reading for enjoyment, the mean reading score of students increased as the frequency of their parents' reading for enjoyment increased. The mean reading score of students whose parents did not read for enjoyment (484.0) is significantly below that of those whose parents read 30 minutes or less a day (517.7). Also, the mean reading score of students whose parents read for more than 1 hour a day (534.8) is significantly above that of those whose parents read for 30 minutes or less a day.

Parents were asked to indicate their level of agreement with five statements relating to reading for enjoyment. Table 4.9 shows the proportion of students whose parents reported to 'strongly agree' or 'agree' with the statements. The majority of students' parents indicated agreement with positively-worded statements such as 'reading is one of my favourite hobbies' (75.0%) and 'I like chatting about books with other people' (64.3%). A minority disagreed with negatively-worded statements such as 'I read only if I have to' (16.6%), 'I read only to get information that I need' (21.0%) and 'reading is a waste of time' (3.6%). This contrasts with student responses to the same questions, discussed in Chapter 3, where students were less positive about reading for enjoyment than their parents.

Table 4.9. Percentages and mean reading score of students whose parents 'strongly agree' and 'agree' with statements about reading compared with the comparable percentages of students

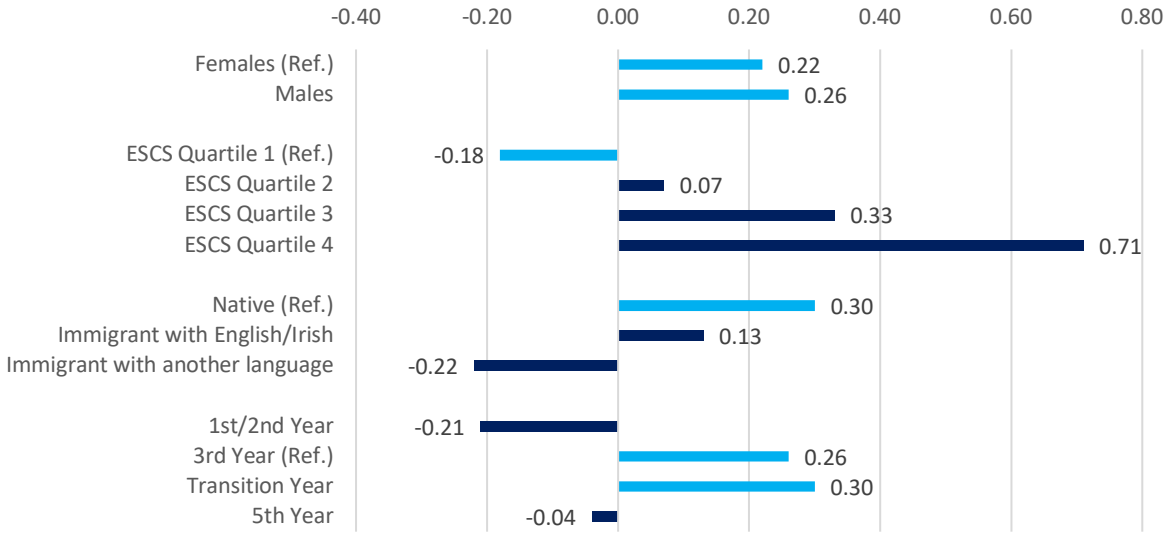
	Parents				Students	
	%	SE	MR	SE	%	SE
I read only if I have to	16.6	(0.66)	489.0	(3.56)	51.5	(0.93)
Reading is one of my favourite hobbies	75.0	(0.59)	529.8	(2.16)	30.8	(0.63)
I like chatting about books with other people	64.3	(0.76)	532.9	(2.13)	33.5	(0.72)
For me, reading is a waste of time	3.6	(0.27)	481.1	(6.48)	26.8	(0.79)
I read only to get information that I need.	21.0	(0.76)	494.3	(3.19)	52.0	(0.93)

See Appendix Table A4.9. MR – mean reading literacy score (PISA 2018).

Like the student index, a composite index of parent enjoyment of reading was constructed by the OECD, based on the statements in Table 4.9. The mean score for Ireland on the index was 0.24, indicating an above average enjoyment of reading when compared to the average of the countries that administered the parent questionnaire (-0.21) and the average

for OECD countries with parent questionnaire data (0.06). Figure 4.5 presents the mean score of the index of parents' enjoyment of reading by student gender, ESCS quartiles, immigrant and language status and year. There is a clear linear pattern, with a positive direction by increasing ESCS quartile and in a negative direction by immigrant and language status. The mean scores vary greatly, ranging from -0.22 for parents of immigrant students who speak a language other than English at home to 0.71 for parents of students in the highest ESCS quartile.

Figure 4.5. Mean score of the index of parent enjoyment of reading by gender, ESCS quartiles, immigrant and language status and year



See Appendix Table A4.18. Significant differences denoted by **darker bars**.

The correlation between reading achievement and parent enjoyment of reading is 0.25, indicating a weak-to-moderate link between parents' enjoyment of reading and student reading achievement (Appendix Table A4.19). The correlation between student enjoyment of reading and parent enjoyment of reading is 0.22, which is again at the upper end of the weak-to-moderate range.

4.3.2 Parental support

It is widely recognised that parental support is of great importance for students (OECD, 2019c). As part of the Parent Questionnaire, parents were asked questions relating to current parental support for learning at home, parents' emotional support and previous parental support for learning at home.

In relation to current parental support for learning at home, parents were asked how often they did a variety of activities. Table 4.10 presents the percentages of students whose parents did various activities at least several times a month. Almost all reported that they 'spend time just talking to my child' (97.6%), 'eat dinner with my child around the table' (91.6%) and 'discuss how well my child is doing at school' (85.4%). Approximately half, 53.2%, reported that they discussed political or social issues. In relation to promotion of reading, less than one quarter reported that they discussed with their child what their child is reading on their own, while only 4.0% reported that they went to a bookshop or library with their child.

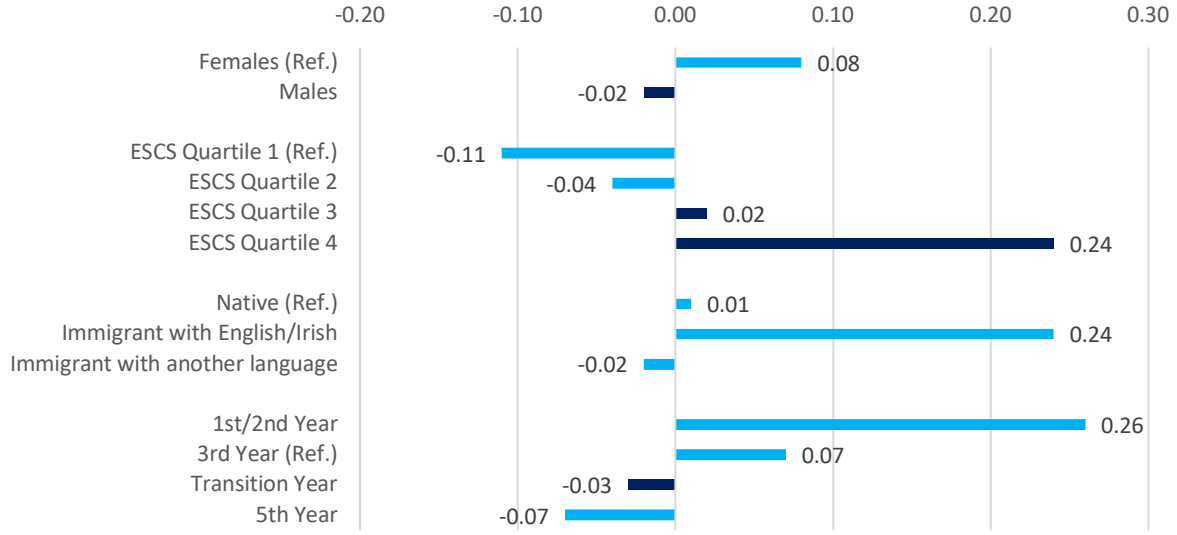
Table 4.10. Percentage of students whose parents do the following things at least several times a month

Percentage of students whose parents at least several times a month…	All Students	
	%	SE
Discuss how well my child is doing at school[24]	85.4	(0.44)
Eat dinner with my child around the table	91.6	(0.46)
Spend time just talking to my child	97.6	(0.23)
Help my child with his/her reading and writing homework	32.0	(0.58)
Discuss political or social issues with my child	53.2	(0.74)
Go to a bookshop or library with my child	4.0	(0.29)
Talk with my child about what he/she is reading on their own	23.3	(0.58)

An index of current parental support for learning at home was constructed by the OECD based on the questions in Table 4.9. The mean score for Ireland was 0.03, which is just above the average among countries that administered the Parent Questionnaire (-0.01). Figure 4.6 presents the mean scores on the parental support index in Ireland by student gender, ESCS quartile, immigrant and language status and year level. There were significant differences between the mean scores of parents of male and female students for current parental support for learning at home, with females having a significantly higher mean score than males. Students in the lowest ESCS quartile had the lowest mean score for current parental support (-0.11), while this increased across the quartiles, with parents of students in the highest quartile assigned a mean score of 0.24. Looking at differences in parental support for learning according to student year level, the mean support score by year decreased as the year increased, indicating lower levels of support for students at higher grade levels. Parents of immigrants students who speak English/Irish at home had the highest mean score while parents of immigrant students who speak a language other than English or Irish at home had the lowest score, though neither mean score is significantly different from that of parents of native students. The correlation of the index of current parental support for learning at home and reading achievement is 0.05, which indicates little or no link between current parental support and achievement.

24 This item is examined again in Chapter 5 (Section 5.1.4), in the context of a Literacy and Numeracy Strategy indicator on the percentage of parents who discuss with their children how they are doing at school 'several times a week'.

Figure 4.6. Mean score of the index of current parental support for learning at home by student gender, ESCS quartiles, immigrant and language status and year level



See Appendix Table A4.18. Significant differences denoted by **darker bars**.

Another question on the Parent Questionnaire refers to the emotional support given by parents. It asked parents to indicate their level of agreement with three statements about their interest in and support for students' school-related difficulties and achievements. Table 4.11 shows the proportion of students whose parents reported that they 'agreed' or 'strongly agreed' with the statements. For all statements, parents of almost all students reported their agreement.

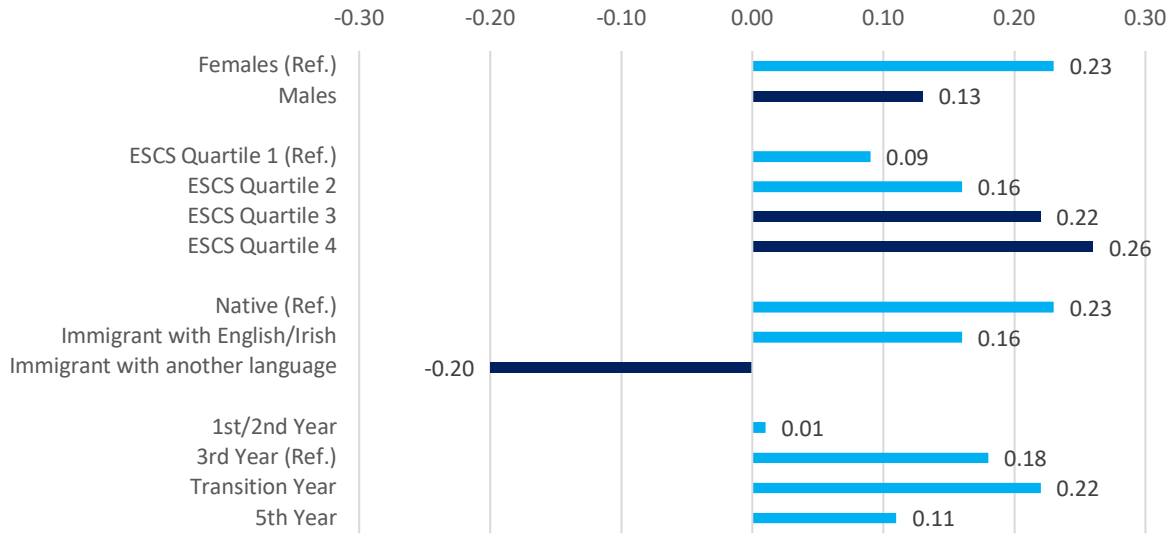
Table 4.11. Percentage of students whose parents 'agree' or 'strongly agree' with the following statements referring to emotional support

Percentage of students whose parents 'agree' or 'strongly agree' to the following statements…	All Students	
	%	SE
I supported my child's efforts and achievements at school	98.8	(0.15)
I supported my child when he/she was facing difficulties at school	98.6	(0.15)
I encouraged my child to be confident	98.7	(0.18)

An index of parents' emotional support was created by the OECD based on the statements in Table 4.10. The mean score in Ireland was 0.18 which is above the average across countries that administered the Parent Questionnaire (-0.02). This indicates that, on average, parents of students in Ireland reported providing more emotional support than did the average student across the countries that administered the Parent Questionnaire. The correlation between the index of parents' emotional support and student reading achievement is 0.06, which indicates little or no link between emotional support and achievement.

Figure 4.7 shows the mean scores on the emotional support index by student gender, ESCS quartile, immigrant and language status and year level. In all categories, apart from immigrants who speak a language other than English at home, the mean score is above the average across the 17 countries that administered the Parent Questionnaire. Scores on the index increased linearly across quartiles of ascending levels of ESCS. Comparing grade levels, Transition year students had the highest mean score (0.22) followed closely by Third years (0.18).

Figure 4.7. Mean score on the index of parents' emotional support by students' gender, ESCS quartiles, immigrant and language status and year level



See Appendix Table A4.18. Significant differences denoted by **darker bars**.

The final question on the Parent Questionnaire relating to support refers to support for learning at home in early childhood. Parents were retrospectively asked how frequently they engaged in reading-related learning activities at home when their child was in Junior Infants (Table 4.12). The proportions of students whose parents engaged in various activities with their child at least once or twice a week was high in all cases. Almost all parents reported that they read books to their child (95.6%), told stories (91.6%) and talked about things they had done (94.1%). The lowest proportions were reported for playing word games (76.1%) and singing songs (80.5%).

Table 4.12. Percentage of students whose parents engaged in various activities with their child when s/he was in Junior Infants

Percentages of students whose parents at least once or twice a week…	All Students		Females (Ref.)		Males	
	%	SE	%	SE	%	SE
Read books	95.6	(0.29)	95.8	(0.37)	95.3	(0.41)
Tell stories	91.2	(0.47)	91.3	(0.56)	91.1	(0.62)
Sing songs	80.5	(0.66)	84.0	(0.75)	**76.7**	(1.05)
Play with alphabet toys	83.3	(0.53)	82.7	(0.69)	84.1	(0.67)
Talk about things you had done	94.1	(0.38)	94.7	(0.47)	93.5	(0.57)
Talk about what you had read	80.2	(0.50)	81.4	(0.77)	**79.0**	(0.72)
Play word games	76.1	(0.61)	76.8	(0.78)	75.3	(0.94)
Write letters or words	87.7	(0.59)	88.5	(0.74)	86.9	(0.91)
Read aloud signs and labels	84.1	(0.57)	83.7	(0.74)	84.6	(0.79)
Say counting rhythms or sing counting songs	83.6	(0.59)	84.6	(0.59)	82.5	(1.01)

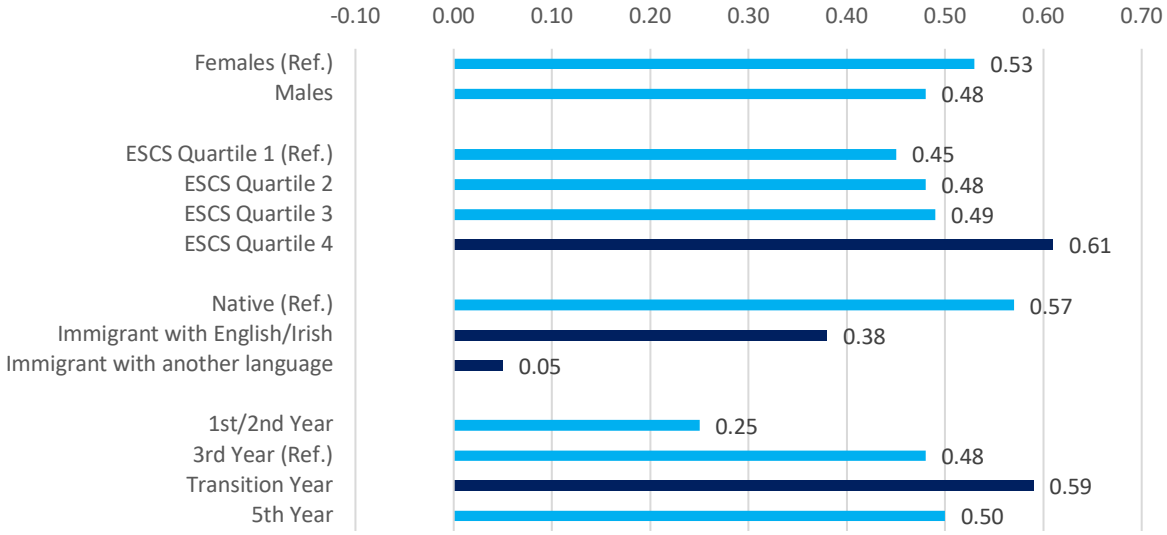
Significant differences in **bold**.

An index of previous parental support for learning at home was created based on the statements in Table 4.12. The mean score for Ireland was 0.51, which is significantly above the average across countries which administered the Parent Questionnaire (-0.08). The

correlation of the index with reading achievement is 0.07 in Ireland, indicating little or no link between previous parental support and achievement.

Figure 4.8 shows the mean scores of the parental support in early childhood index by student gender, ESCS quartile, immigrant and language status and year level. Males and females had similar mean scores, representing a similar level of parental support when in Junior Infants. While the mean score by ESCS quartile is consistent across the first three quartiles, students in the highest quartile had a significantly higher mean score than students in the first quartile. Native students had a mean score of 0.57, which is significantly above the mean scores of both immigrant groups. Transition year students had a significantly higher mean score (0.59) than that of Third years (0.50).

Figure 4.8. Mean score of the index of parental support for learning at home in early childhood by student gender, ESCS quartiles, immigrant and language status and year



See Appendix Table A4.18. Significant differences denoted by **darker bars**.

4.3.3 Parental involvement

Getting involved at school allows parents to obtain first-hand information on the learning environment, and they can identify ways in which to navigate the education system. Involvement can also signal to children that their parents view education as important, and they can influence their child's behaviour by establishing consistent norms (Cohen et al., 2009; Grolnick and Slowiaczek, 1994). The OECD has shown that parents' involvement in their child's education is positively associated with student outcomes, including reading literacy (OECD, 2019d).[25]

The parent questionnaire asked parents to report ('yes' or 'no') whether, during the previous academic year, they had participated in ten school-related activities. Table 4.13 presents

25 This is based on an association between principals' reports (on the PISA 2018 School Questionnaire) of the percentages of parents who discuss their child's progress on the initiative of one of their teachers. Drawing on aggregated data across 74 countries/economies, a 10-point increase on PISA reading literacy was reported for a 10% increase in the proportion of parents who discuss their child's progress on the initiative of one of their child's teachers, after accounting for per capita GDP and other forms of parental involvement in school activities (OECD, 2019d, Figure 3.10.4). Negative increments in reading performance were reported for other forms of parental involvement (participation in local school government, volunteering in physical or extra-curricular activities).

the proportions of students whose parents reported participating in various school-related activities in the 2016-2017 academic year (that is, the school year immediately before the PISA assessment). The activity in which they most frequently participated was attending a scheduled meeting or conference for parents, where Ireland reported a proportion (87.7%) that was above the average among the 17 countries that distributed the Parent Questionnaire (78.7%). Almost 60% of students' parents reported that they had 'talked about how to support learning at home and homework with my child's teachers', which is again above the corresponding 17-country average (54.7%). In all other cases, the proportions reported in Ireland were below the corresponding country averages. The activities which were reported least often were volunteering in physical or extra-curricular activities (9.6%), participating in the Board of Management or Parents' Association (8.7%) and volunteering to support school activities (7.6%).

Table 4.13. Percentages of students whose parents participated in school related activities

	%	SE
Discussed my child's behaviour with a teacher on my own initiative	34.8	(0.71)
Talked about my child's behaviour at the request of one of his/her teachers	24.0	(0.71)
Discussed my child's progress with a teacher on my own initiative	38.3	(0.89)
Talked about my child's progress at the request of one of his/her teachers	36.8	(0.82)
Participated in the Board of Management of Parents' Association	8.7	(0.49)
Volunteered in physical or extra-curricular activities	9.6	(0.46)
Volunteered to support school activities	7.6	(0.41)
Attended a scheduled meeting or conference for parents	87.7	(0.50)
Talked about how to support learning at home and homework with my child's teachers	59.8	(0.86)
Shared ideas on parenting, family support or understanding of my child's development with my child's teachers	30.4	(0.68)

See E-Appendix Table A4.10.

By student ESCS quartile, the proportions reported for activities such as discussing their child's behaviour or progress with a teacher on their own initiative or at the request of a teacher decreases as the quartiles increased from bottom to top (Appendix Table A4.10). However, in relation to participating in activities or meetings or discussing how to support their child's education, the proportions increased as the quartiles increased.

For immigrant and language status, there was less variation across the three groups (Appendix Table A4.10). For example, in relation to discussing their child's behaviour or progress on either their own initiative or at the request of one of their teachers, parents of immigrant students who speak English/Irish at home reported the highest proportions (40.6% and 45.0% respectively), followed by immigrants who speak a language other than English at home (37.2% and 37.5% respectively) and native students (33.9% and 37.6% respectively). In relation to participation in optional activities, parents of immigrant students who speak a language other than English reported the lowest participation (6.9%), which may in part be due to a language difference that may exist between school and home.

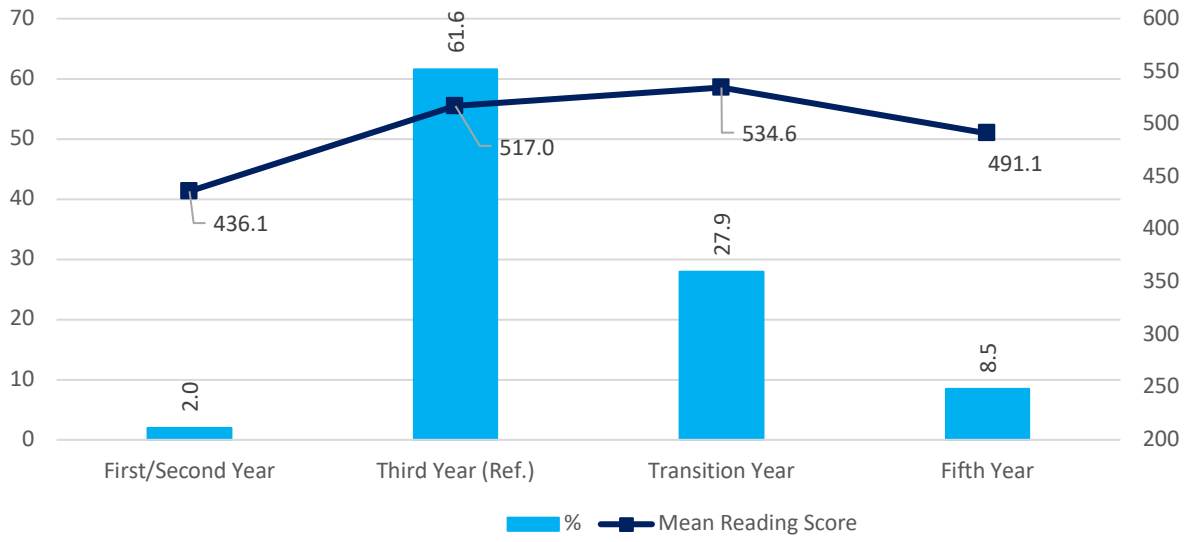
4.4 PARTICIPATION IN AND ATTITUDES TO EDUCATION

This section examines students' participation in and attitudes to education. It explores the breakdown in proportions and achievement by year level, attendance at pre-school, absences from school in the two weeks prior to the PISA assessment, and expected educational attainment, as reported by students and by parents.

4.4.1 Year level

PISA employs an age-based sample (students are between 15 years and 3 months and 16 years and 2 months) and includes students ranging from First year to Fifth year. Figure 4.8 presents the proportions and mean reading scores of students in 2018 at different year levels. Over three fifths of students in 2018 were Third years (61.6%). Students in Transition year made up 27.9%, with the rest in First/Second year (2.0%) or Fifth year (8.5%). First/Second years had the lowest mean achievement score of 436.1 while Fifth years had a mean reading score of 491.1. The mean scores of students at both year levels were significantly below those of Third years (517.0) (Appendix Table A4.11). Students in Transition year had the highest mean reading achievement score at 534.6. This was significantly above the mean score of Third years.

Figure 4.9. Percentages of students and mean reading score by year



See Appendix Table A4.11.

In 2009, the proportion of Fifth years (14.4%) was greater than in 2018 (8.5%), while the proportions for other year levels were similar in both years. The mean reading scores at all year levels have increased from 2009 to 2018 (suggesting that students in all year level groupings were more likely to have under-performed in 2009). The mean reading achievement scores of First/Second years and Third years are significantly higher in 2018 compared with 2009 (Table 4.14).

Table 4.14. Percentages of students by year and mean reading literacy, PISA 2009 and 2018.

	2009		2018 (Ref.)	
	%	MR	%	MR
First/Second Year	2.5	**376.0**	2.0	436.1
Third Year	59.1	**487.9**	61.6	517.0
Transition Year	24.0	525.3	27.9	534.6
Fifth Year	14.4	498.2	8.5	491.1

See Appendix Table A4.12. Significant differences in **bold**.

4.4.2 Attendance at pre-school

As part of the parent questionnaire, parents were asked whether their child regularly attended pre-primary education (e.g., playschool, Montessori, pre-school, Naíonra, Early Start).[26] Overall, parents reported that 86.0% of students had attended pre-primary education. They achieved a mean reading score of 526.0 at age 15. Students who had not attended pre-primary education had a significantly lower mean reading score (507.6). The proportions of females and males who had attended pre-primary education are similar, and, for both genders, the mean reading scores of those who did not attend are significantly lower than those who did (Table 4.15).

Table 4.15. Percentages of students whose parents reported that they attended pre-primary education

Regularly attend Pre-Primary education (e.g. playschool, Montessori, pre-school, Naíonra, early start, etc.)	Yes (Ref.)		No	
	%	Mean Reading	%	Mean Reading
All Students	86.0	526.0	14.0	507.6
Gender				
Females	86.8	537.4	13.2	**514.8**
Males	85.1	513.7	15.0	**500.9**
ESCS Quartile				
Quartile 1: Lowest	79.1	491.2	20.9	484.3
Quartile 2: Lowest – Medium	85.3	513.5	14.7	514.6
Quartile 3: Medium – High	88.6	531.0	11.4	529.5
Quartile 4: Highest	90.9	562.8	9.1	**528.4**
Immigrant Language Status				
Native	88.9	528.4	11.1	515.5
Immigrant with English/Irish	80.3	527.5	19.7	516.3
Immigrant with another language	61.5	516.1	38.5	**485.7**
Year				
First/Second Year	66.6	440.6	33.4	438.8
Third Year	87.4	523.8	12.6	**503.9**
Transition Year	85.5	543.4	14.5	**526.2**
Fifth Year	80.7	500.0	19.3	508.2

See Appendix Table A4.13 for standard errors. Significant differences in **bold**.

26 The initial Early Childhood Care and Education (ECCE) programme in Ireland (the 'free school year') began accepting pre-school children from January 2010. Hence, 15-year olds in PISA 2018 would have been too old to avail of the scheme when it began. Most students in future PISA cycles (2022 onwards) who lived in Ireland during early childhood will likely have availed of state-funded pre-school education.

The proportion in 2018 who had attended pre-primary education increased by ESCS quartile ranging from 79.1% in the lowest quartile to 90.9% in the highest quartile. Concurrently, the mean reading achievement scores increased by ESCS quartile. Only in the highest quartile is the mean reading score significantly higher for those who attended pre-primary education (562.8) than those who did not (528.4). The mean score on the index of ESCS for those who attended pre-primary education was 0.20, while for those who did not attend pre-primary it was -0.13.

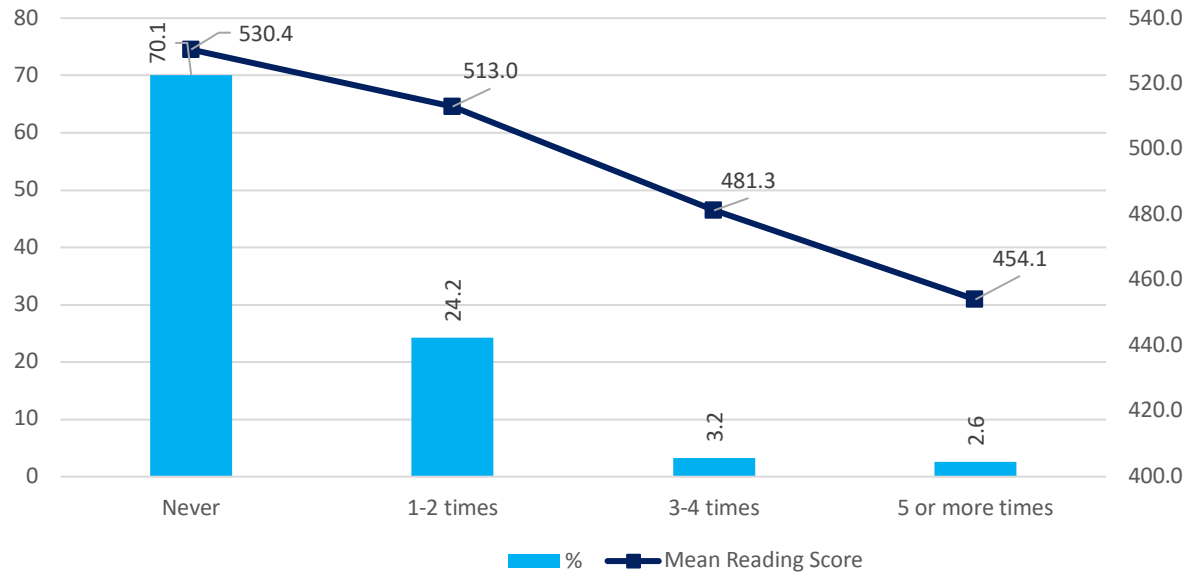
The highest proportion who attended pre-primary education were native students (88.9%). They achieved a mean reading score of 528.4. This was significantly higher than the mean score of native students who did not attend pre-primary education (515.5). The proportions who attended pre-primary education were much lower for immigrant students, with 80.3% of immigrant with English/Irish attending pre-primary education and 61.5% of immigrant with another language doing so.

As there was no parents' questionnaire distributed in 2009, there is no comparable data for attendance at pre-school as reported by parents. However, students in PISA 2009 were asked about preschool attendance, and 82.6% reported that they had attended. This was below the 2009 OECD average of 91.7% (Perkins et al. 2012).

4.4.3 Absences from school

Students were asked how often, in the two weeks preceding the PISA 2018 assessment in their school, they had skipped whole school days. Their responses were categorised into never, one or two times, three or four times and five or more times (Figure 4.10). Most students, 70.1%, reported that they had not skipped a whole school day and the mean reading score of these students (530.4) was significantly higher than those who had been absent from school for a day or more. One quarter of students reported that they had skipped 1-2 days (mean reading score of 513.0), 3.2% of students skipped 3-4 days (mean reading score of 481.3) and 2.6% of students skipped five or more days (mean reading score of 454.1).

Figure 4.10. Percentages of students and mean reading score by how many days missed in the past two weeks – PISA 2018 in Ireland



See Appendix Table A4.14.

More males reported skipping five or more days (3.0%) than females (1.9%) (Appendix Table A4.14.). Across the ESCS quartiles, the lowest quartile reported the highest proportion of students who were absent 5 or more days (3.6%) and the proportion decreased as the quartiles increased, to 1.5% for the highest quartile.

In 2018, fewer students reported skipping days at school compared with 2009 (Table 4.16). The percentage of students who did not skip a day at school was significantly greater in 2018 (70.1%) than in 2009 (60.4%). Also, significantly fewer students missed one or two days or three or four days in 2018 than in 2009. In the five or more days' category, the proportion was smaller by 0.6% in 2018 than in 2009, but this difference is not significant.

Table 4.16. Percentages of students by absences, 2009 and 2018

In the last two weeks of school, how often did you skip a whole school day?	2009		2018 (Ref.)	
	%	SE	%	SE
Never (Ref.)	**60.4**	(0.96)	70.1	(0.81)
One or two times	**31.1**	(0.87)	24.2	(0.72)
Three or four times	**5.5**	(0.43)	3.2	(0.28)
Five or more times	3.1	(0.32)	2.5	(0.22)

See Appendix Table A4.15. Significant differences in **bold.**

4.4.4 Expected educational attainment of students and parents

As part of the student questionnaire, students were asked to indicate the education level they expect to attain.[27] The responses were used to create a variable for the highest level

27 Students were asked to tick whether they expected to complete Junior Cert., Leaving Cert. Applied, Leaving Cert., an apprenticeship, a third-level certificate or diploma and a university degree. The highest level of education selected by each student was noted as the highest they expect to achieve. Students who did not tick any or only ticked Junior Cert. are grouped in the Primary or Junior Cert. group.

of expected educational attainment (Table 4.17). Over half of students (57.7%) expected to achieve a university or post-graduate degree, while another 22.0% expected a third-level certificate or diploma. These two options accounted for nearly four fifths of students. Fewer than 3.0% reported that primary or Junior Cycle would be their highest level of education. The mean reading score of those who expected to achieve a university or post-graduate degree (547.0) was significantly higher than the mean scores of all other categories.

On the parents' questionnaire, parents were asked the same question in respect of their child and, as before, a variable was created to report the highest level of education that parents expect their child to achieve (Table 4.17). Comparing the students' and parents' responses, a higher proportion of parents reported that they expected their child to attain a third-level qualification (89.8%) compared with students (79.7%). In particular, 69.1% of students' parents reported that they expected their child to achieve a university or post-graduate degree, compared with 57.7% of students. The proportion of parents who expected their child to go no further than primary schooling or Junior Cycle was 1.0%, a third of the corresponding proportion reported by students.

Table 4.17. Percentages and mean reading scores of students by highest level of education that students (children) expected to achieve, and that parents expected their children to achieve

	Students				Parents	
	%	SE	MR	SE	%	SE
Primary or Junior Cycle	2.9	(0.24)	404.0	(8.10)	1.0	(0.17)
Leaving Certificate Applied	3.2	(0.26)	412.1	(5.72)	1.4	(0.19)
Leaving Certificate	6.6	(0.36)	462.2	(4.09)	2.9	(0.28)
An Apprenticeship	7.6	(0.43)	462.2	(4.28)	4.9	(0.34)
A third-level certificate or diploma	22.0	(0.69)	511.4	(2.38)	20.7	(0.66)
A university degree or post-graduate degree (Ref.)	57.7	(1.01)	547.0	(2.39)	69.1	(0.87)

See Appendix Table A4.16 and A4.17. Significant differences in **bold**.

Overall, more females students expected to achieve higher levels of education than males. Significantly more females reported that they expected to achieve a university or post-graduate degree (66.8%) than males (48.4%). Nearly five times more males expected to complete an apprenticeship (12.7%) than females (2.6%) (Appendix Table A4.16).

Proportions also differ across ESCS quartiles. Just over one in three of students in the lowest quartile expected to achieve a university or postgraduate degree (36.6%) while this proportion more than doubled (78.1%) for students in the highest quartile (Appendix Table A4.16). Achieving a third-level qualification (third-level certificate or diploma or a university or postgraduate degree) was expected by 93.4% of students in the highest quartile, 86.6% of students in the second highest quartile, 77.9% of students in the second lowest quartile and by 62.8% of students in the lowest quartile.

4.5 SUMMARY

Background economic, social and cultural factors

Students' economic, social and cultural status (ESCS) is an index created using related socio-economic indicators. In PISA 2018, the ESCS index was derived from three variables related to family background: parents' highest occupational status, parents' highest level of education and home possessions. High scores on the ESCS index indicate higher student economic, social and cultural status. At student level, reading achievement increased as ESCS quartiles increased, with the mean reading score of the lowest ESCS quartile significantly lower than the mean reading scores for the other quartiles. Ireland reported a mean score of 0.13 on the ESCS index, which is above the OECD average (-0.03). The mean score on ESCS in 2018 was significantly higher than in 2009 (-0.01). The correlation between ESCS and reading achievement is 0.33, which indicates a moderately strong relationship between ESCS and reading achievement.

Students' linguistic and social background

The PISA 2018 sample was made up of 82.1% of native students, 9.0% of immigrants who speak English or Irish at home and 8.8% of immigrants who speak another language at home. Immigrants who speak a language other than English/Irish at home had a significantly lower mean score (498.5) than native students (522.1) while the mean reading score of immigrants who speak English/Irish at home (518.2) was not significantly different from native students. The proportion of students categorised by PISA as immigrants has nearly doubled from 8% in 2009 to 17.8% in 2018, but is consistent with the proportion for 2015.

When asked about paid work during term time, most students (69.3%) reported not engaging in any paid work. The percentage of students who engaged in paid work decreased as the time increased (14.7% worked up to 4 hours a week, 9.0% worked between 4 and 8 hours and 7.1% worked more than 8 hours). Students who reported completing any level of paid work during term time had significantly lower mean reading scores than students who did not work at all. Males were almost three times more likely than females to work more than 8 hours. Since 2009, the proportion of all students engaging in paid work has increased (from 25.2% to 35.8%).

When asked about assuming caring responsibilities on a regular basis, over half of students (52.1%) reported having such responsibilities. Students who reported having caring responsibilities had a significantly lower mean reading score (507.5) than those who reported not having caring responsibilities (549.3). The proportions reported were consistent by gender but varied according to immigrant and language status, with 65.6% of immigrants who speak a language other than English/Irish at home reporting that they had caring responsibilities compared to 49.7% of native students.

Parental support, reading habits and strategies

Overall, parents reported reading for enjoyment more frequently than students. Over one third of students' parents reported reading for enjoyment more than 1 hour a day with a similar proportion reading between 30 and 60 minutes. Only 10.7% reported not reading for

enjoyment in comparison to nearly half of students (47.7%). Students' mean reading scores increased as the length of time their parents spent reading for enjoyment increased. Three quarters of students' parents reported that reading was one of their favourite hobbies, while fewer than 5% reported that reading was a waste of time. In Ireland, the mean score on the OECD-constructed index of parent enjoyment of reading was 0.24, which is substantially and significantly above the average across all countries that administered the parent questionnaire (-0.21). The correlation between the index of parent enjoyment of reading and reading achievement is 0.03.

High percentages of students' parents agreed or strongly agreed that they spent time just talking to their child (97.6%), eating dinner with their child around the table (91.6%) and discussing their progress at school (85.4%) at least several times a month. Lower proportions reported going to a bookshop or library (4.0%) or talking to their child about what their child was reading (23.3%). The mean score for Ireland on the parental support index was 0.03, which is above the average among countries that administered the parent questionnaire (-0.01). Parents of students in the two highest ESCS quartiles reported significantly higher mean scores on the index, while parents of female students reported a higher mean score than parents of male students. The correlation of the index of current support for learning at home and reading achievement is 0.05, which indicates little or no link between current support and achievement.

Parents were asked questions relating to emotional support and almost all parents 'agreed' or 'strongly agreed' that they supported their child's efforts and achievements, supported their child when he/she was facing difficulties at school and encouraged their child to be confident. This translated to a high mean score for Ireland on the index of parents' emotional support (0.18) – above the average across the countries that administered the parent questionnaire (-0.02). The correlation between the index of parent emotional support and reading achievement is 0.06 which indicates little or no link between emotional support and achievement. Immigrants who speak a language other than English at home reported a mean score (-0.20) below the overall international average for parents and this was significantly below the mean for parents of native students (0.23).

Parents were also asked about the support for learning at home in early childhood. An index of previous parental support was created and parents in Ireland had a mean score of 0.51, which is significantly above the average across countries that administered the parent questionnaire (-0.08). The correlation between the index of parent support for learning at home in early childhood and reading achievement is 0.07, again indicating little or no link between emotional support and achievement. The mean score for parental support for learning at home in early childhood increased across the ESCS quartiles and was significantly lower for both parents of immigrants with English/Irish and parents of immigrants with another language, compared to parents of native students

High proportions of parents reported attending a scheduled meeting or conference for parents (87.7%) and talking about how to support learning at home and homework with their child's teachers (59.8%). Fewer than 10% of students' parents reported that they had volunteered for physical or extra-curricular activities (9.6%) or volunteered to support school activities (7.6%).

Participation in and attitudes to education

In PISA 2018, in line with its age-based sample, over three-fifths of students were Third years (61.6%) and more than a quarter were Transition years (28.0%). Smaller proportion of Fifth years (8.4%) and First/Second years (2.0%) took part. Transition year students reported the highest mean score on reading (534.7), significantly higher than Third years (517.5). Both First/Second years (436.2) and Fifth years (493.0) had mean reading scores which were significantly below that of Third years. The proportion of students in Transition year in 2018 (27.9%) was greater than in 2009 (24%). The proportion in Fifth year in 2018 (8.5%) was less than in 2009 (14.4%).

Parents reported that 86.0% of students had attended pre-primary education. Those with a pre-primary education had a mean reading score of 526.0 at age 15 in PISA 2018. Students who had not attended pre-primary education had a significantly lower mean reading score (507.6). Similar proportions reported attending pre-primary education by gender. The proportion who had attended pre-primary education was higher for the top two ESCS quartiles, compared with the bottom two. Only 61.5% of parents of immigrant students who speak a language other than English/Irish at home reported that their child had attended preschool.

When asked about absences from school in the two weeks prior to testing, most students (70.1%) reported not skipping any days, 24.2% reported skipping one or two days, 3.2% reported skipping three or four days and 2.6% reported skipping five or more days. Mean reading scores decreased significantly as the frequency of absence increased, compared to those students who had not skipped a day. The ESCS mean value for those who did not skip a day was significantly higher (0.18) than for students who missed one or two days (0.07) or five or more days (-0.18).

Over half of students (57.7%) expected to achieve a university degree or post-graduate degree and these students reported a mean reading score of 547.0. A further one fifth of students (22.0%) expected to achieve a third-level certificate or diploma. A small proportion, 2.9%, reported that they did not expect to finish secondary school. The mean reading scores for all groups were significantly lower than those who expected to obtain a university degree or post-graduate degree. When parents were asked the same question in relation to educational attainment, a higher proportion, (69.1%) expected their child to obtain a university degree or post-graduate degree. The proportion of students whose parents expected them not to complete secondary school was lower (1.0%) than that reported by the students themselves (2.9%).

Chapter 5 – Implementation of the National Literacy and Numeracy Strategy 2011-2020 in Post-Primary Schools

The National Strategy for Literacy and Numeracy 2011-2020 (DES, 2011) aimed to improve literacy and numeracy standards among children and young people in the educational system. Among other things, the Strategy was a response to a decline in performance in Ireland in PISA 2009 which led to significant concerns about the literacy and numeracy skills of young people. In the subsequent cycles of PISA, performance returned to pre-2009 levels and an Interim Strategy Review was published in 2017 with updated goals and new targets intended to further improve performance. As PISA is used as the benchmark for performance targets for post-primary students, it might be noted that 2018 was the last opportunity before 2020 in which to measure progress towards the new PISA-related targets. The next PISA assessment is scheduled for 2022 (postponed from 2021, due to Covid-19) and results will not be available until December 2023.

This chapter comprises of three sections relating to the National Literacy and Numeracy Strategy. Firstly, student targets in literacy are reviewed, including those for DEIS schools, with reference to performance on PISA 2018 reading literacy. Secondly, school principals' responses from the School Questionnaire are presented, including national questions specific to the Strategy. The third section includes responses from Junior Cycle English teachers to items on the English Teacher Questionnaire which also relate specifically to the Strategy. It might be noted that this chapter draws on national questions about the National Literacy and Numeracy Strategy, administered as part of PISA 2018.

5.1 PERFORMANCE TARGETS

The National Strategy for Literacy and Numeracy 2011-2020 set out national improvement targets. The targets focused on improvements in literacy and numeracy as well as other targets specific to aspects of the educational system such as teacher preparation and educational provision at early childhood, primary and post-primary levels (DES, 2011). Some of the targets were created in response to concerns about national standards due to large and significant declines in reading literacy and mathematics performance in PISA 2009 (see Chapter 1). The 2011 Strategy document outlined two targets related to reading literacy performance in PISA:

- increase the percentage of students performing at or above Level 4 by at least five percentage points; and
- halve the percentage of students performing at or below Level 1.

The Interim Review of the National Strategy for Literacy and Numeracy was published in 2017. Many of the targets originally set out in 2011 had already been achieved by then, so the Interim Review included new targets for 2017-2020. The new targets relating to PISA aimed to build on improvements in reading and mathematics at post-primary level (effectively a return to historic levels, see Chapter 2) with a more specific focus on the needs of the highest achieving students (DES, 2017a). This is evident in the inclusion of specific targets for students at or above Level 5. Targets for students in DEIS schools were also set out for the first time in the Interim Review. And a target was set out to increase the proportion of boys reading daily for enjoyment to at least 60% and the proportion of girls to at least 70% by 2020 (DES, 2017a).

5.1.1 Reading literacy targets for students across all post-primary schools

Table 5.1 presents the targets for reading proficiency from the 2011 Strategy, the updated targets from the Interim Review and actual proficiency in PISA 2009, PISA 2015 and PISA 2018. It might be noted that none of the targets from the Strategy are accompanied by standard errors.

Table 5.1: Targets from the original and updated National Literacy and Numeracy Strategy documents and position in PISA 2009, 2012, 2015 and 2018 – percentages of 15-year olds across all schools

PISA Proficiency Levels	Position as of PISA 2009		Target for 2020 set in the 2011 Strategy	Position as of PISA 2012		Position as of PISA 2015*		Revised Literacy & Numeracy Strategy 2017-2020	Position as of PISA 2018	
	%	SE	%	%	SE	%	SE	%	%	SE
At or below Level 1	17.2	(1.05)	8.5	9.6	(0.88)	10.2	(0.80)	Below 8.5	11.8	(0.67)
At or above Level 4	28.9	(1.16)	34.0	37.4	(1.11)	37.1	(1.12)	40.0	36.2	(1.02)
At or above Level 5	7.0	(0.53)	No target in 2011	11.4	(0.65)	10.7	(0.65)	12.0	12.1	(0.67)

Note: PISA transitioned to computer-based assessment in most countries, including Ireland, in 2015.

Level 2 in reading literacy is considered a baseline level of reading skills, with the United Nations, in its Sustainable Development Goals, identifying Level 2 as the minimum standard that should be obtained by the end of compulsory schooling (SDG global indicator 4.1.1c, United Nations Statistics Division, 2019). The 2011 Strategy document included a target of 8.5% of students in Ireland performing at or below Level 1, with a slightly more ambitious target of below 8.5% in the 2017 Report. In PISA 2015, 10.2% of students were at or below Level 1, and this increased to 11.8% in PISA 2018. Table 5.1 shows a 5.4 percentage point decrease in students at or below Level 1 from 2009 to 2018. However, since 2012, the percentage has been increasing slightly (from 9.6% in 2012 to 10.2% in 2015 and 11.8% in 2018). While the changes implied by these percentages are not large enough to be statistically significant, each one is farther away from the target of 8.5% set in 2017, suggesting that it will be more difficult to achieve in future rounds of PISA.

In all, 36.2% of students were at or above Level 4 in 2018, a decrease of 0.9% from 2015, which is too small to reach significance. This is above the target set out in the 2011 Strategy but is 3.8% below the 2017 target, indicating that the new target has not been met.

In PISA 2018, 12.1% of students were at or above Level 5, an increase of 1.4% from 2015 and in line with the target of 12.0% in the Interim Review. Following a substantial increase from 7.0% in 2009 to 11.4% in 2012 (effectively a reversion to earlier trend), the percentage of students at Levels 5-6 has been broadly consistent.

5.1.2 Reading literacy targets for students in DEIS schools

The Interim Review introduced new targets specific to DEIS post-primary schools to be achieved by 2020[28]. These included a focus on reducing the gap in achievement in reading between students in DEIS post-primary schools and students in all post-primary schools (DES, 2017a). Table 5.2 presents the targets for DEIS schools relating to reading achievement from the Interim Review (after adjustment)[29] as well as performance in PISA 2009, PISA 2015 and PISA 2018.

Table 5.2. Targets from revised National Literacy and Numeracy Strategy (2017-2020) and position according to PISA 2015 and 2018 – percentages of 15-year olds in DEIS schools

PISA Proficiency Levels	Position as of PISA 2009		Target for 2020 set in the 2011 Strategy	Position as of PISA 2015		Adjusted Targets Revised Strategy 2017-2020[1]	Position as of PISA 2018	
	%	SE		%	SE	%	%	SE
At or below Level 1	35.4	(2.67)	No corresponding targets in 2011	21.8	(3.15)	18.0	21.8	(2.04)
At or above Level 4	11.9	(1.48)		21.4	(2.21)	26.0	21.2	(1.86)
At or above Level 5	2.8	(0.75)		4.7	(0.99)	8.0	5.5	(0.78)

[1] Source of adjusted targets: Gilleece et al., 2020, Table 2.2. See footnote 29 below.

In 2018, just over one fifth (21.8%) of students in DEIS post-primary schools were at or below Level 1 (minimum proficiency). These students often have difficulty when confronted with unfamiliar material of moderate length and difficulty (OECD, 2019b). This is in line with the proportion reported in PISA 2015 but represents a decrease of 13.6% since PISA 2009. It also means that the adjusted revised target of 18% has not been achieved.

Over one fifth (21.2%) of students in DEIS post-primary schools were at or above Level 4, a 0.2% decrease from the position in PISA 2015 but a 9.3% increase from PISA 2009. Since the 2018 estimate (22.8%) is below the adjusted revised target of 26.0%, the target has yet to be met.

28 Whereas the Interim Review referred to 2020 as the year by which the new DEIS targets would be achieved, the Department of Education and Skills' Action Plan 2016 (DES, 2016b) had indicated that the targets were to be achieved by 2025. Reference was also made to 2025 in relation to PISA targets in the Department's Action Plan 2017 (DES, 2017d.

29 The targets for DEIS schools in the Interim Review were based on PISA 2015 data. These were subsequently adjusted because an older (and therefore incorrect) classification of DEIS schools had been used in establishing them. The DEIS targets in Table 5.2 are based on the adjusted figures in Table 2.2 in Gilleece, Nelis and Fitzgerald (2020).

Students at Level 5 or above can be referred to as high-performing students and 5.5% of students in DEIS schools performed at or above this level in PISA 2018, an increase of 0.8% since 2015. When compared to PISA 2009, the proportion has nearly doubled. However, 5.5% is below the adjusted revised target of 8%, which indicates that the target has not been met.

5.1.3 Students' frequency of reading for enjoyment

As well as targets on performance by proficiency level, the Interim Review outlines additional actions to strengthen literacy and numeracy. It identifies a key indicator as the proportion of all students reading on a daily basis for enjoyment. The target outlined is to increase the proportion of boys reading on a daily basis to at least 60% by 2020 and the proportion of girls to at least 70% (DES, 2017a). In PISA 2009, 52.5% of boys and 63.9% of girls reported reading for enjoyment on a daily basis. In the Student Questionnaire in PISA 2018, students were again asked how much time they spend reading for enjoyment. Over half of girls (60.6%) reported reading daily while a much lower proportion (43.9%) of boys reported reading with this frequency, decreases of 3.3% and 8.6% respectively from 2009. Students reported reading less often than their counterparts in 2009 and proportions in 2018 are below the targets set out in the Interim Review.

5.1.4 Parents' support for their children's learning

The 2017 Interim Review also set out actions to help parents in supporting their children's learning, including literacy (DES, 2017a). One key indicator is the percentage of parents who discuss with their children how they are doing at school several times a week. In PISA 2015, 56.1% of students reported discussing this with their parents several times a week. The target outlined in the report was to increase this to 60%. In PISA 2018, 51.9% of students reported discussing their progress in school with their parents several times a week, a 4.2% decrease from PISA 2015. A change in the opposite direction would be needed to achieve the target of 60 percent.

5.2 SCHOOL PRINCIPALS' REPORTS ON STRATEGY IMPLEMENTATION

The School Questionnaire in PISA 2018 included national questions relating to the Literacy and Numeracy Strategy 2011-2020. School principals were asked to report on activities and policies they had implemented related to the Strategy. Five questions were associated with reading literacy relating to the objectives set out in the National Literacy and Numeracy Strategy 2011-2020 and updated in the Interim Review 2017-2020.

5.2.1 School implementation of the National Literacy and Numeracy Strategy

One of the objectives in the 2011-2020 Strategy involved supporting schools in implementing school self-evaluation with a focus on literacy and numeracy (DES, 2011). In PISA 2018, principals were asked if their school had undertaken self-evaluation in relation to the literacy and numeracy achievements of students (a requirement for DEIS planning). Almost

all students (95.4%) attended schools whose principals reported that their school had undertaken such a self-evaluation (Table 5.3), while principals of students in DEIS schools reported a slightly higher percentage (97.4%) than principals of students in non-DEIS schools (94.8%). Community and Comprehensive schools reported the lowest proportion (91.4%) with Mixed Secondary reporting the highest (100%) (Appendix Table A5.1). Since 2012, school self-evaluation (SSE) and school improvement plans (SIPs) are required of all post-primary schools, which may explain the high levels of self-evaluation across all schools. It might be noted that almost one fifth of students (18.6%) were in schools whose principals reported that the school did not have an action plan for improving the use of assessment and evaluation to better support learning in literacy.

Table 5.3. Percentages of students whose principals indicated that various activities were in place to support implementation of the National Literacy and Numeracy Strategy, by DEIS status

	All Schools		DEIS (Ref.)		Non-DEIS	
	%	SE	%	SE	%	SE
Undertake self-evaluation in relation to literacy/numeracy achievements of students.	95.4	(1.67)	97.4	(2.63)	94.8	(2.03)
Assess English literacy at the start of Junior Cycle.	96.0	(1.64)	100.0	(0.00)	**94.7**	(2.16)
Have a clear plan on how to improve students' literacy across the curriculum.	93.0	(2.21)	100.0	(0.00)	**90.8**	(2.95)
Have an action plan on how to improve the use of assessment and evaluation to support better learning in literacy.	81.4	(3.10)	85.9	(5.93)	80.1	(3.69)
Have a clear plan on how to help students with additional learning needs to achieve their potential in literacy.	93.7	(2.13)	94.1	(4.23)	93.6	(2.46)

See Appendix Table A5.1. Significant differences (DEIS – non-DEIS) in **bold.**

As part of the first phase of SSE (2012-2016), schools were expected to put an emphasis on literacy and numeracy (DES, 2012b). In the second phase, 2016-2021, they were asked to reflect on their progress in the first phase (DES, 2016).[30] Principals of 93% of students reported having a clear plan for improving students' literacy across the curriculum (Table 5.3), with principals of all students in DEIS schools reporting that they had such a plan. A similar proportion of students (93.7%) attended schools whose principals reported having an action plan to help students with additional needs to improve their literacy skills (Table 5.3). Proportions varied from 90.1% in Mixed Secondary to 100% in Boys Secondary schools and Community and Comprehensive schools (Appendix Table A5.1).

According to the Strategy, 'knowing how well students are learning can help us to improve their achievement' (DES, 2011, p.73). Assessment is described as informing teachers' professional practice and supporting more directed teaching and learning in literacy (DES, 2017a). Principals were asked to report on whether they assess English literacy at the start of Junior Cycle. Almost all students (96%) were in schools where their English literacy is assessed at that time (Table 5.3). Principals were also asked whether they had an action plan on how to improve the use of assessment and evaluation to support better learning

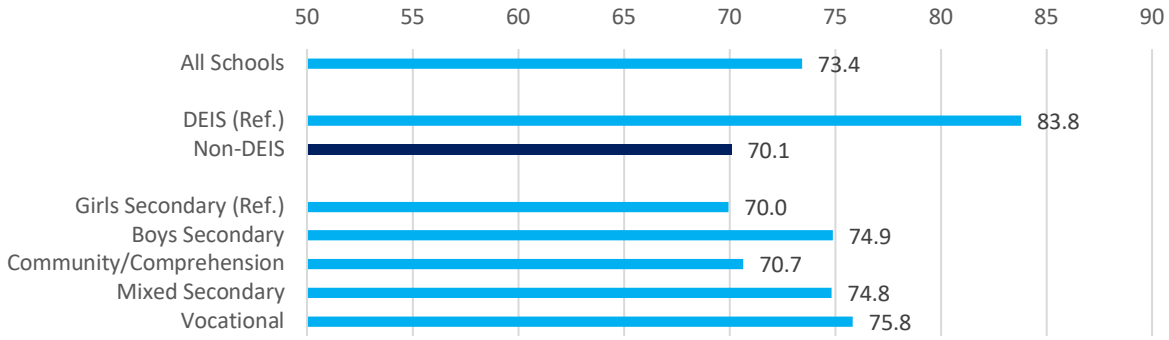
30 Originally the second phase was due to run from September 2016 to June 2020. In light of the disruptions caused to schooling due to the COVID-19 pandemic, the Department of Education extended the second cycle until June 2021 (Circular 0040/2020).

in literacy. Over four fifths of students (81.4%) attended schools whose principals reported that they had an action plan, with marginally more such students attending DEIS schools (85.9%) than non-DEIS schools (80.1%).

5.2.2 School co-ordinators and co-ordinating groups for literacy

The School Questionnaire asked principals whether or not they had a designated co-ordinator for literacy. Figure 5.1 shows the percentage of students whose principals reported having a literacy co-ordinator (e.g., literacy link teacher) by DEIS status, school sector and gender composition. Almost three quarters of students (73.4%) were in schools whose principal reported that the school had a literacy co-ordinator. A significantly higher proportion was reported in DEIS schools (83.8%) than in non-DEIS schools (70.1%), indicating a stronger focus on literacy in DEIS schools, perhaps reflecting the emphasis on literacy in DEIS planning. Girls Secondary and Community/Comprehensive schools reported similar proportions of 70.0% and 70.7% respectively, as did Boys Secondary (74.9%), Mixed Secondary (74.8%) and ETB/Vocational schools (75.8%). None of these proportions are significantly different from the reference group (Girls Secondary).

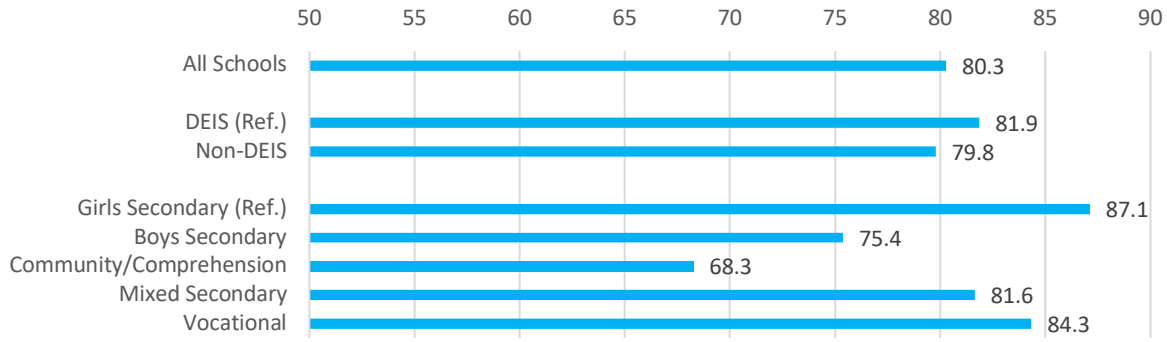
Figure 5.1. Percentages of students whose principals report having a literacy co-ordinator, by DEIS status and school gender composition/sector



See Appendix Table A5.2 for standard errors. Significant differences denoted by **darker bars**.

Principals were also asked whether or not they had a group or committee comprising teachers across a broad range of subjects to co-ordinate and support literacy development within the school. Principals of 80.3% of students reported having a group to support literacy development within the school (Figure 5.2). Similar proportions were reported for DEIS schools (81.9%) and non-DEIS schools (79.8%). Girls Secondary schools reported the highest proportion (80.3%) while Community and Comprehensive schools reported the lowest (68.3%). Overall, a greater proportion of schools reported having a literacy group to support literacy development compared with a literacy co-ordinator.

Figure 5.2 Percentages of students whose principals report having a group to co-ordinate and support literacy development within the school, by DEIS status and school gender composition/sector



See Appendix Table A5.2 for standard errors. Significant differences denoted by **darker bars**.

5.2.3 Staff implementation of the National Literacy and Numeracy Strategy

In PISA 2018, the School Questionnaire also included a series of statements about the implementation of the Strategy at the classroom level by school staff. Principals were asked to what extent they agreed or disagreed with the statements. They were asked about school staff having a clear understanding of the goals of the Literacy and Numeracy Strategy. Overall, 88.3% of students were in schools whose principals agreed or strongly agreed (Table 5.4). In DEIS schools, a higher proportion (92.1%) agreed or strongly agreed than in non-DEIS schools (87.2%).

When asked about the extent to which they agreed that their school took national targets in the Literacy and Numeracy Strategy into account when deciding on school-level targets, 71.1% of students were in schools whose principals agreed or strongly agreed. DEIS schools reported a higher proportion (83.9%) than non-DEIS schools (67.2%). There was also a wide range in results when considered by school sector and gender composition with proportions ranging from 57.6% in Girls Secondary schools to 79.5% in Boys Secondary schools (Appendix Table A5.5).

Table 5.4. Percentages of students whose principals 'agree' or 'strongly' agree with various statements, by DEIS status

Percentage of students whose principals 'agree' or 'strongly agree' that…	All Schools		DEIS (Ref.)		Non-DEIS	
	%	SE	%	SE	%	SE
School staff have a clear understanding of the goals of the Literacy and Numeracy Strategy	88.3	(2.47)	92.1	(4.30)	87.2	(2.95)
The school takes national targets in the Literacy and Numeracy Strategy into account when deciding on school-level targets	71.1	(3.62)	83.9	(5.13)	67.2	(4.51)
Teachers of different subjects work together to improve students' literacy and numeracy across the curriculum	89.6	(2.29)	92.9	(3.73)	88.6	(2.76)
Teachers of subjects other than English have the skills to develop and improve students' literacy	93.4	(1.90)	87.3	(4.98)	95.3	(1.89)
Teachers of subjects other than English help students develop and improve their literacy skills	96.5	(1.38)	100.0	(0.00)	95.4	(1.80)
There is a culture of co-operation and best-practice sharing in the school in relation to literacy	91.4	(2.12)	94.7	(3.27)	90.4	(2.60)
Teachers work with parents and the wider community to support children's literacy	64.6	(4.15)	73.4	(5.97)	61.9	(5.28)

Source: Appendix Tables (A5.4-A5.10).Significant difference (DEIS – non-DEIS) in **bold**.

The 2011 Strategy states that the teaching of literacy needs to be integrated across the curriculum (DES, 2011). The development of literacy skills is not limited to the English classroom but should permeate all aspects of school life. Principals of 93.4% of students agreed or strongly agreed that teachers of subjects other than English had the skills to develop and improve students' literacy (Table 5.2). Principals of the vast majority of students also agreed that teachers of subjects other than English helped students improve literacy. Almost all students (95.3%) attending non-DEIS schools and 87.3% in DEIS schools had principals who agreed or strongly agreed with this view.

Principals were asked questions relating to collaboration among teachers in developing literacy in schools. Similar proportions of students were in schools whose principals agreed or strongly agreed that there was a culture of co-operation in relation to supporting literacy (91.4%) and that teachers worked together to improve literacy (89.6%) (Table 5.4). Similarly high proportions were reported in DEIS and non-DEIS schools for both questions. However, more variation was evident among school sector and gender categories. In Mixed Secondary schools, lower proportions were reported for the culture of co-operation (84.0%) and teachers working together to improve literacy (80.0%). In both cases, almost full proportions were reported for ETB/Vocational schools (Appendix Tables A5.6, A5.9).

The Strategy highlights the importance of parents and the wider community in developing their children's literacy skills when it states that 'young people achieve better when their parents take an active interest in their education' (DES, 2011, p.19). The School Questionnaire asked principals to what extent they agreed that teachers worked with parents and the wider community to support children's literacy and numeracy. A good proportion of students

attended schools whose principals strongly disagreed or disagreed (32.0%), with a lower proportion reported in DEIS schools (26.6%) than non-DEIS schools (33.5%) (Appendix Table A5.10). In Mixed Secondary schools, almost half of the students were in schools whose principals disagreed or strongly disagreed (Appendix Table A5.10). The nature of parental involvement to support the literacy of 15-year-old students is worthy of additional examination, given the varying literacy needs and interests of such students.

5.2.4 Factors that contributed to/hindered the improvements to literacy

As part of the School Questionnaire, principals were provided with an opportunity to highlight factors that contributed to improving literacy and factors that hindered improvements to literacy. Principals were provided with the opportunity to free-write their responses. Table 5.5 summarises the responses related to factors which contributed to improving literacy, grouped by theme. Just under a quarter of responses referred to the idea that a school action plan contributed to improving literacy. The presence of a literacy co-ordinator/group and teacher collaboration and implementation were reported by almost one quarter of principals. For example, one principal reported that:

> We have developed a School Improvement Plan for Literacy and Numeracy which is implemented across all year groups. There is a dedicated school committee for literacy and numeracy who share resources and strategies with all staff. [We have] literacy and numeracy weeks and Drop Everything and Read/Spelling Bee initiatives. (*Community School/Non-DEIS*)

Many schools reported the adoption of approaches involving the teaching of literacy across all departments and subjects, with one principal referring to '…Open discussion at staff meetings and acceptance that this is an area for all subjects, not just English…' (*Mixed Secondary School/Non-DEIS)* and another referring to '…Awareness of the importance of numeracy and literacy and integrating this into individual and department subject plans' *(Mixed Secondary School/Non-DEIS).*

Table 5.5. Percentages of principals who identified various factors that contributed to improving literacy, by theme

Theme and Subcategories	%	Theme and Subcategories	%
Catalysts (9.9%):		**School-wide approach (52.0%):**	
National Literacy Strategy provided a focus	1.5	School action plan	24.3
New methodologies	1.7	School-wide activities	14.6
New programmes/initiatives	6.7	School Self-Evaluation – Literacy/Numeracy	19.3
Staff Ownership (58.7%):		**Concrete Actions (22.5%):**	
Literacy Co-ordinator	5.0	Classroom activities	7.2
Literacy Team	17.4	Tracking students' progress	5.0
Integrated Approach	16.1	CPD in Literacy	10.7
Teachers' acceptance and implementation	19.2	**Home Support (1.5%):**	
Collaboration of Staff	8.0	Parental Involvement	1.5
SEN (Special Education Needs) support	4.7		

All percentages are based on 157 principals in participating schools.

Principals were also asked about factors which hindered improvements to literacy. Table 5.6 presents the responses as identified by school principals. The most common response was a lack of time (for creating an action plan and for implementation in the classroom) (40.1%). For example:

> Time is a factor, finding the time to hold meetings, analyse data etc. Sometimes it's challenging to sustain measures. It begins very focused and with all staff involvement but sometimes slips during school year with so many other initiatives and jobs for teachers (*ETB/Vocational School/DEIS*).

Nearly one in ten principals (8.3%) reported that introduction of the new Junior Cycle across all subjects was now a major priority, leaving less time for other strategies or initiatives. One referred to 'a raft of other changes to the curriculum at the same time i.e. Junior Cycle implementation...' (*ETB Vocational School/DEIS*)

Other factors hampering improvement in literacy, according to principals, included students' excessive use of technology, curriculum and exam pressure, a lack of reading options at home and a lack of home support.

Table 5.6. Percentages of principals who identified factors that hindered the improvement of literacy, by theme

Theme and Subcategories	%	Theme and Subcategories	%
Co-ordination Factors (5.1%):		**Staff Factors (20.4%):**	
No co-ordinated approach	3.2	Resistance from staff	6.4
No literacy and numeracy co-ordinator	1.2	Demand on teachers	8.9
Lack of tracking achievement	0.6	Teacher allocation	6.4
School-related Factors (29.9%):		**Student Factors (16.6%):**	
Exam pressure	3.4	Social media-technology	8.9
Curriculum pressure	3.8	Wide range of reading ages	3.2
Focus on Junior Cycle	8.3	Resistance from students	1.9
Initiative Overload	18.5	Poor attendance at school	3.2
Lack of School Resources (46.5%):		**Lack of Home Support (10.2%):**	
Lack of money	7.6	Lack of reading options at home	3.2
Lack of time	40.1	Lack of support from parents	7.0

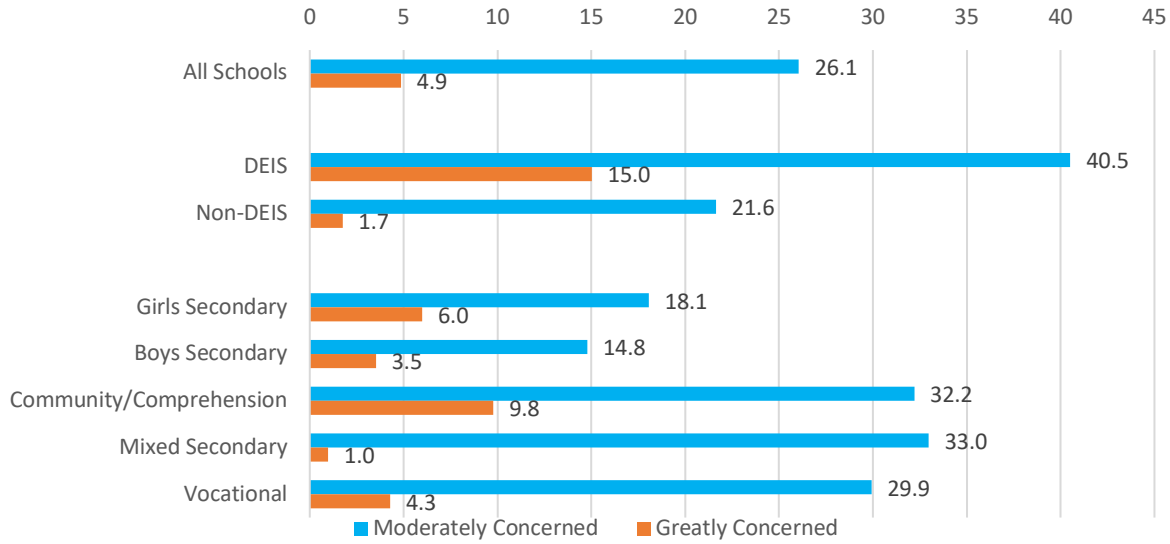
5.2.5 Schools' concerns over low literacy skills

Drawing on PISA 2009 results, the 2011 Strategy (DES, 2011) reported that one in ten children in Irish schools had serious difficulty with literacy and that, in some disadvantaged schools, it was as high as almost one in three students. In the School Questionnaire, principals were asked to what extent they were concerned about the literacy standards of students in their school, in terms of allowing them to access the wider curriculum.

Figure 5.3 presents the proportions of students whose principals reported that they were greatly concerned or moderately concerned about students' ability to access the curriculum due to low literacy skills. Overall, over 30% were either moderately or greatly concerned.

The proportions who were 'moderately concerned' or 'greatly concerned' are substantially different for DEIS schools (55.5%) and non-DEIS schools (23.3%). Girls Secondary schools had the lowest combined proportion (24.1%) while Community and Comprehensive Schools reported the highest (42.0%). When looking solely at the proportions of those greatly concerned, Mixed Secondary schools were represented by the lowest percentage (1.0%), and Community and Comprehensive by the highest (9.8%).

Figure 5.3. Percentage of students whose principals reported being 'greatly concerned' or 'moderately concerned' about students' ability to access the curriculum due to low literacy skills, by DEIS status and school gender composition/sector



See Appendix Table A5.11 for standard errors.

5.3 TEACHERS OF JUNIOR CYCLE ENGLISH AND THE NATIONAL STRATEGY FOR LITERACY AND NUMERACY

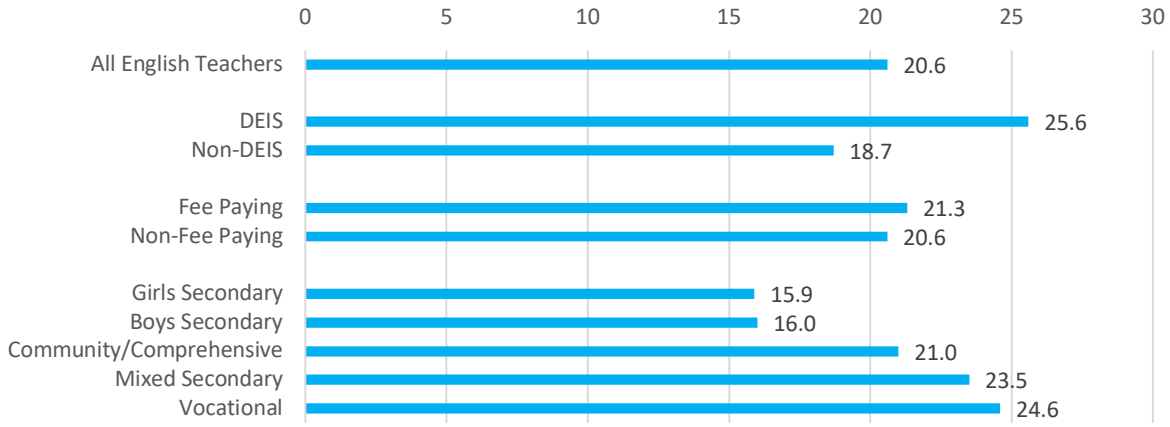
In PISA 2018, teachers of Junior Cycle English in participating schools were asked to complete a questionnaire. It covered a wide range of topics including questions relating to types of material used in class, skills and processes relevant to reading literacy, and assessment practices in Junior Cycle English classes. The questionnaire also included questions relating to the Literacy and Numeracy Strategy. Data in this section were weighted using PISA school weights, with an adjustment for teacher non-response (teachers in participating schools who did not complete the teacher questionnaire). Hence, the data can be viewed as representative of teachers of Junior Cycle English nationally, although, where differences are referred to, it is not possible to ascertain their statistical significance.

5.3.1 Literacy link teacher

English teachers were asked whether they had worked as a Literacy Link teacher at any time over the past three years. Over one fifth (20.6%) reported having worked as a literacy link teacher (Figure 5.4). Differences were present in the proportions of teachers assuming this role in DEIS schools (25.6%) and non-DEIS schools (18.7%), while similar proportions in fee-paying schools and non-fee paying schools reported that they had undertaken it (21.3%

and 20.6% respectively). Girls Secondary and Boys Secondary teachers reported similar proportions, as did teachers in Mixed Secondary and ETB/Vocational schools.

Figure 5.4. Percentages of English teachers who reported that they had worked as a Literacy Link teacher, by school DEIS status, fee-paying status, and sector



5.3.2 CPD relating to literacy

The English Teacher Questionnaire included questions relating to the hours of continuous professional development (CPD) completed by teachers in a range of different categories. In the categories related to Junior Cycle English (as outlined in Chapter 6), high proportions reported completion of CPD and those categories are independent of the categories presented in this section.

The National Literacy and Numeracy Strategy (DES, 2011) notes that supporting teachers' professional development can enhance the teaching of literacy and numeracy. The Strategy highlights the need for continuing professional development (CPD) to enable and enhance pedagogical understanding and skills throughout teachers' careers. Table 5.7 presents the percentages of teachers who reported that they had completed some professional development in areas relating to literacy throughout the curriculum, and in the context of Literacy Link and Cluster meetings (but not general JC English CPD) in the two years prior to PISA 2018.

Table 5.7. Percentage of English teachers who completed some hours of CPD relating to literacy in the last two years, by school DEIS status, fee-paying status and school/gender composition

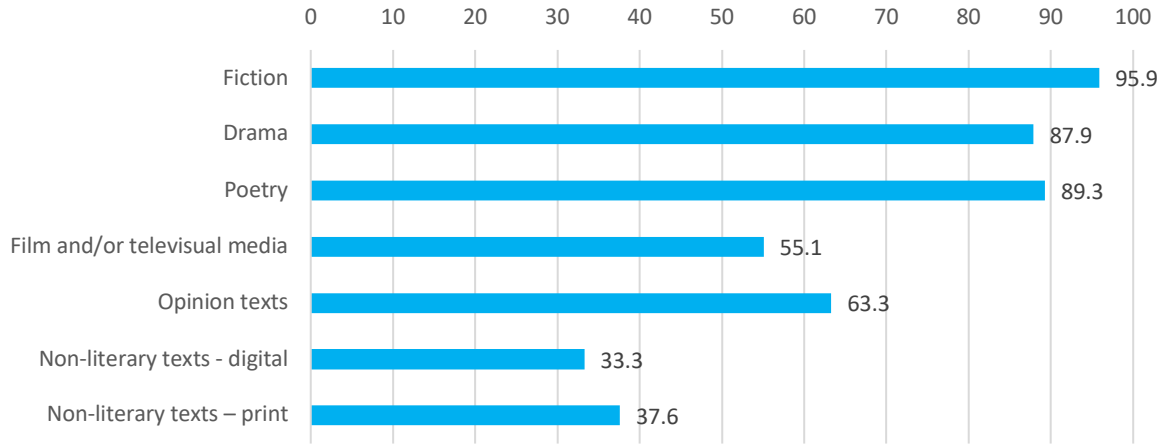
	Teaching English throughout the curriculum	Literacy Link Courses and Cluster Meetings
All English Teachers	39.5	39.9
DEIS Status		
DEIS	43.2	42.5
Non-DEIS	38.1	38.9
Fee-Paying Status		
Fee Paying	24.1	42.1
Non-Fee Paying	40.7	39.8
School Sector/Gender Composition		
Girls Secondary	35.2	42.1
Boys Secondary	40.4	28.3
Community/Comprehensive	37.3	34.9
Mixed Secondary	43.1	43.6
ETB/Vocational	41.2	46.1

Similar proportions of teachers reported completing CPD on teaching English throughout the curriculum (39.5%) and in attending literacy link courses and cluster meetings (39.9%). This pattern is also seen in DEIS and non-DEIS schools where approximately two in five reported receiving CPD in these contexts. Fewer teachers in fee-paying schools (24.1%) reported having completed CPD in teaching English throughout the curriculum compared with non-fee paying schools (40.7%), while Boys Secondary schools reported a lower proportion (28.3%) participating in literacy link courses and cluster meetings (28.3%) than schools with other sector/gender combinations.

5.3.3 Type of texts used in a Junior Cycle English classroom

The 2011 Strategy outlined the goal of including a variety of literary and non-literary texts in the Junior Cycle English classroom. It highlighted that with the older Junior Certificate syllabus in English the focus was on teaching to the examination, which it linked to an overuse of textbooks that largely promoted lower order thinking skills (DES, 2011). In 2011, a new Junior Cycle English was introduced with the expectation that students would engage with a range of literary and non-literary texts to support the development of a broad range of literacy skills (DES, 2011). As part of the English teacher questionnaire in PISA 2018, teachers were asked how often their Third year students worked with several types of materials in their English classes, or as part of their homework. Figure 5.5 presents the percentages of English teachers who reported including various types of texts in 'several' or 'almost all' classes.

Figure 5.5. Percentages of English teachers who reported that they included specific text types in several or almost all Third year English classes



See Appendix Table A5.12.

Literary texts including fiction, drama and poetry were reported to be used more frequently with nearly all English teachers (95.9%) reporting that they included fiction in several or almost all classes. The Junior Cycle English framework endorses the use of a variety of texts including film and/or televisual media and opinion texts. Over half of teachers reported using these types of texts in several or almost all Third-year English classes. Non-literary texts options included digital (e.g. podcasts, blogs, photographs, etc.) and print (e.g. informational texts, instructions, newspaper articles etc.), and these were included in several or almost all classes by about one third of English teachers. While literary texts were used most frequently, most teachers of Third-year students reported using a relatively broad range of texts.

5.3.4 Students who struggle with aspects of communication

The Strategy defines literacy as 'the capacity to read, understand and critically appreciate various forms of communication including spoken language, printed text, broadcast media and digital media' (DES, 2011, p.8). This has developed from the traditional idea of literacy as the skills of reading and writing and incorporates the skills of speaking and listening as well as communicating using digital media. Young people who do not have these skills have fewer opportunities to learn and often cannot fully participate in schools and education (DES, 2011). English teachers were asked what proportion (less than 5%, 6-10%, 11-20%, 21-50% or more than 50%) of their Third-year English students struggled with speaking, reading, writing and listening. Table 5.8 represents the proportions reported by the teachers.

Table 5.8. Percentages of English teachers reporting various proportions of Third-year students in their classes struggling with aspects of communication in English

Areas of communication	**Less than 5%**	**6-10%**	**11-20%**	**21-50%**	**More than 50%**
Speaking	42.9	25.1	17.6	9.8	4.6
Reading	26.8	28.5	26.4	11.8	6.5
Writing	16.6	27.3	29.5	18.4	8.2
Listening	27.6	24.6	27.7	13.5	6.6

Just over two fifths of teachers (42.9%) reported that fewer than 5% of their students were struggling with speaking, with lower proportions for listening (27.6%), reading (26.8%) and writing (16.6%). In the more than 50% category, the highest proportions reported by teachers were for writing (8.2%), followed by listening (6.6%), reading (6.5%) and speaking (4.6%). Table 5.9 represents the proportions of teachers who reported that more than 20% of Third-year students struggled with different areas of communication by DEIS status, fee-paying status and school sector/gender breakdown.

Table 5.9. Percentage of English teachers reporting that over 20% of Third year students struggled with aspects of communication in English, by school DEIS status, fee-paying status and school sector/gender composition

More than 20% of students struggle with...	**Speaking (%)**	**Reading (%)**	**Writing (%)**	**Listening (%)**
All Schools	14.4	18.4	26.6	20.1
DEIS Status				
DEIS	19.1	29.4	39.6	29.5
Non-DEIS	12.4	13.9	21.5	16.4
Fee-Paying Status				
Fee Paying	3.4	5.8	10.2	1.6
Non-Fee Paying	15.1	19.2	27.7	21.3
School Sector/Gender Composition				
Girls Secondary	13.1	7.7	14.7	11.0
Boys Secondary	18.8	19.8	32.3	26.8
Community/Comprehensive	18.5	26.6	33.2	21.7
Mixed Secondary	12.2	14.9	21.0	19.4
ETB/Vocational	11.6	21.8	31.0	21.9

Over one quarter of Third-year English teachers (26.2%) reported that more than 20% of students struggled with writing, the highest proportion across the different areas of communication. Higher proportions were reported by teachers in DEIS schools than by teachers in non-DEIS schools across all areas. Much lower proportions were reported by teachers in fee-paying schools than in non-fee paying schools. There is no clear pattern across school sector/ gender breakdown as teachers in Boys Secondary schools reported the highest proportions for speaking and listening, and teachers in Community and Comprehensive schools reported the highest proportions for reading and writing. Overall,

the highest proportions were reported for writing, which suggests that this provides a greater challenge to teachers than other modes of communication.

5.3.5 English teachers' views on teaching literacy

As part of the English Teacher Questionnaire, teachers were asked to indicate to what extent they agreed or disagreed with the various views on teaching literacy. Table 5.10 represents the proportions who strongly agreed or agreed with these statements. Almost all English teachers (97.4%) either agreed or strongly agreed that they had the skills to address the literary needs of the students in their classes but this decreased to 71.8% when referring to the literacy needs of students with special educational needs. More English teachers in DEIS schools (97.8%) than in non-DEIS schools (97.1%) reported that they had the necessary skills to address literacy needs of students in their class, with a similar pattern observed in relation to students with special educational needs (78.7% of teachers in DEIS schools and 68.9% in non-DEIS schools) (Appendix Table A5.13).

Table 5.10. Percentage of English teachers who 'strongly agree' or 'agree' with the various statements on teaching literacy

	Strongly Agree (%)	Agree (%)
I have the necessary skills to address the literacy needs of the majority of students in my class.	53.0	44.4
I have the necessary skills to address the literacy needs of students with special educational needs.	19.6	52.2
I have the necessary skills to address the literacy needs of students for whom English/Irish is not their first language.	13.7	41.4
Support and resource teachers are mainly responsible for addressing the needs of students with literacy problems.	5.6	18.1
My primary role is to teach English literature, not literacy.	1.7	7.8
I understand how students develop basic literacy skills.	24.0	66.9
I understand how students develop advanced literacy skills.	26.7	62.1
I work with other members of the English Department to improve literacy of all the students in my classes.	35.3	52.5
I take responsibility for my own professional development in addressing the literacy needs of all students in my classes.	35.1	56.2
I look to school management to initiate professional development in literacy.	5.9	35.6

See Appendix Table A5.13 for additional data.

Almost one in ten teachers (9.2%) strongly agreed or agreed that their primary role was to teach English literature and not literacy. In DEIS schools, 5.6% of English teachers agreed or strongly agreed with this – about half the proportion of that in non-DEIS schools (11.1%). Teachers' responses to this question imply that they attribute high importance to their role both as teachers of literacy and as teachers of literature.

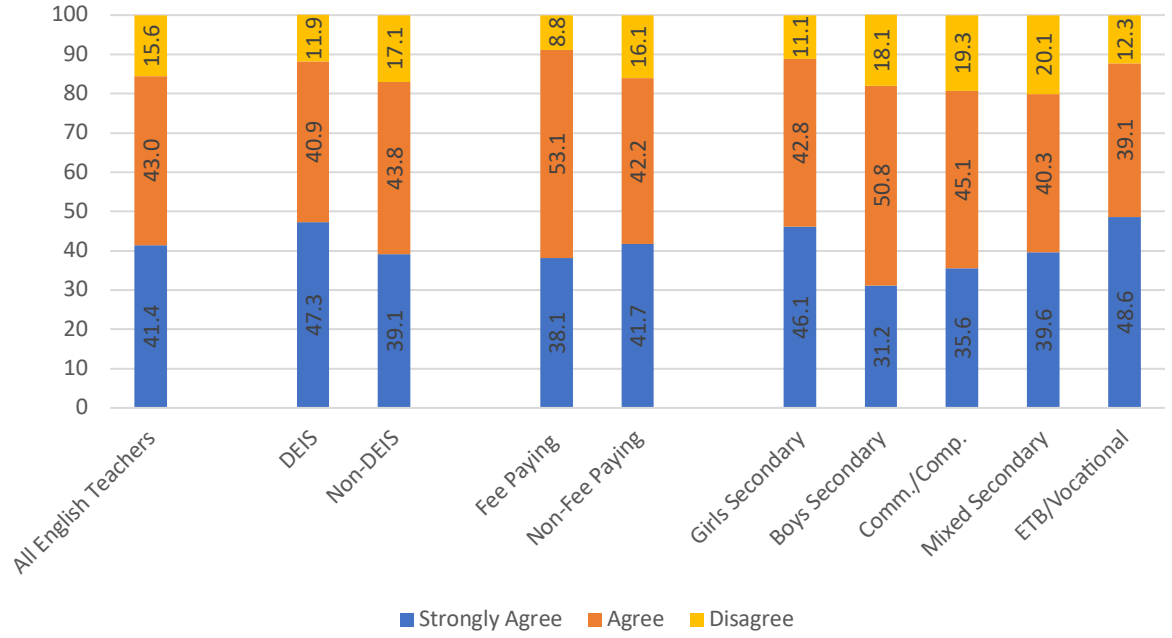
English teachers were asked two questions about professional development relating to literacy. When asked if they took responsibility for their own professional development relating to literacy, 35.1% strongly agreed and 56.2% agreed that they did, which represents over 90% of English teachers surveyed. The second question asked teachers whether

they look to school management to initiate professional development in literacy. Only 5.9% strongly agreed and 35.6% agreed that they relied on school management in this respect. Similar proportions were reported for DEIS and non-DEIS schools, with a combined agree and strongly agree proportion of 40.6% for DEIS schools and 41.9% for non-DEIS schools (Appendix Table A5.13).

5.3.6 Staff collaboration and involvement in developing literacy

English teachers were presented with statements about the integration of literacy into subjects in their school and the approach taken. They were asked to indicate the extent to which they agreed or disagreed with a number of statements. The first asked whether there was a culture of sharing best practice on how to improve students' literacy at school level. A similar question was included in the School Questionnaire. Figure 5.6 presents the proportions for English teachers, by DEIS, fee paying status, and sector/gender breakdown.

Figure 5.6. Percentage of English teachers indicating varying levels of agreement that there is a culture of sharing best practice on how to improve students' literacy at school level, by DEIS status, fee-paying status, and school type/gender category

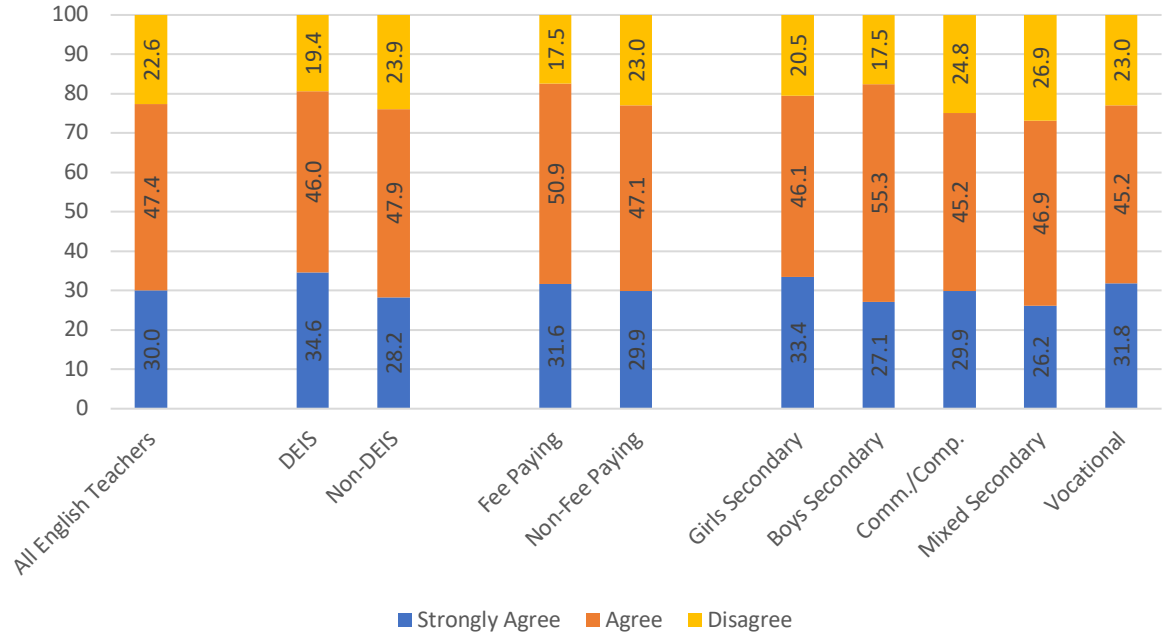


See Appendix Table A5.14. Disagree includes both 'strongly disagree' and 'disagree' and the full breakdown in the proportions is included in the appendix table.

Similar proportions of teachers reported a culture of sharing in each of the categories, summing to approximately 80-90% in total. Teachers in fee-paying schools had the largest combined proportion at 91.2% while teachers in DEIS schools had the highest percentage of those who strongly agreed with the statement at 47.3%.

The second statement related to collaboration and implementation of the Strategy. English teachers were asked to show their level of agreement with the view that teaching staff as a whole in their school took an active and integrated approach to addressing the literacy needs of students. Figure 5.7 presents the proportions for all teachers and for teachers by DEIS, fee-paying status and school sector/ gender breakdown.

Figure 5.7. Percentages of English teachers indicating varying levels of agreement with the view that the teaching staff as a whole in the school take an active and integrated approach to addressing the literacy needs of students, by DEIS status, fee-paying status, and school type/gender category



See Appendix Table A5.15. Disagree includes both 'strongly disagree' and 'disagree'. The full breakdown in the proportions is included in the appendix table.

The combined proportions of 'strongly agree' and 'agree' make up approximately three quarters of the total and is mainly consistent across the categories. As before, teachers in fee paying schools reported the highest combined proportion (82.5%) with teachers in DEIS schools reporting the highest proportion of strongly agree (34.6%). The lowest combined proportion was reported by teachers in Mixed Secondary schools (73.1%).

5.3.7 English teachers' involvement and views on the Literacy Strategy

The penultimate question in the English Teacher questionnaire included thirteen statements relating to the National Literacy and Numeracy Strategy 2011-2020. Teachers were asked to respond with 'yes' or 'no' to the statements. Table 5.11 presents the proportions of teachers selecting 'yes' for each statement across all schools, with a breakdown by DEIS, fee-paying status and school sector in Appendix Table A5.16.

Table 5.11. Percentages of teachers indicating their understanding of and involvement in various aspects of the National Literacy and Numeracy Strategy 2011-2020, all schools

	%
I am familiar with the original Literacy and Numeracy for Learning and Life Strategy, published in 2011.	76.2
I have read the Interim Review of the Strategy, published in March 2017.	39.8
I am familiar with the revised national targets for reading literacy in the Interim National Strategy Review.	53.5
I have been involved in setting targets for literacy in my school.	68.5
I am active in my school in helping to improve students' basic literacy skills.	91.8
I often support other teachers in my school to teach literacy in their subject areas.	54.0
I am often called on by other teachers to provide advice on teaching literacy skills in their subject areas.	33.9
I have participated in professional development that has enabled me to support teachers in other subject areas in my school to teach literacy skills.	38.9
I receive strong support from leaders in my school to support the development of students' literacy skills across subject areas.	63.5
I have the skills required to teach digital literacy skills in English.	53.7
Subject teachers in my school are generally aware of the implications of the National Strategy for their work in the area of literacy.	63.7
My school has a clear plan to improve the literacy skills of lower-achieving students during Junior Cycle.	76.5
Literacy Link teachers in my school have succeeded in increasing the focus on literacy across different disciplines/subjects.	68.4

See Appendix Table A5.16.

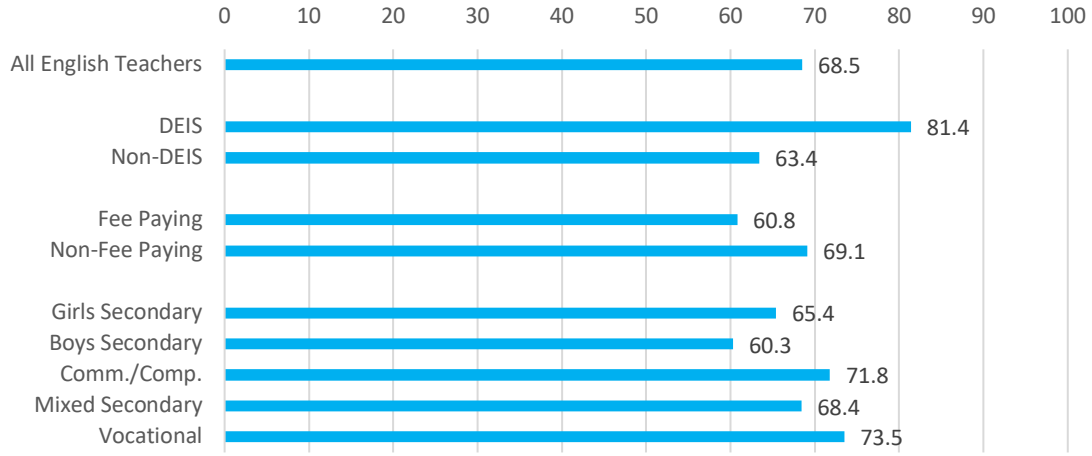
Just over three quarters of the English teachers (76.2%) reported familiarity with the original 2011 Literacy Strategy. While 53.5% of English teachers said they were aware of the revised targets as contained in the Interim Review published in 2017, only 39.8% said that they had read the Interim Review, indicating a relatively low engagement with literacy policy documents. A very high proportion (91.8%) reported that they were active in helping to improve students' basic literacy skills. While just over half (54.0%) reported supporting other teachers to teach literacy in other subject areas, only 38.9% reported that they were often called on by other teachers to provide advice on teaching literacy skills in their subject areas. English teachers' skills are a resource potentially available throughout schools, which could be utilised to improve literacy across all subject areas as long as these teachers are interested and have the knowledge base to develop literacy skills.

The definition of literacy as set out in the National Strategy documents (DES, 2011, 2017a) outlines that literacy is not confined to print media but also includes digital media. However, just over half (53.7%) of English teachers reported that they had the skills required to teach digital literacy skills in their subject. Almost four in ten (38.9%) English teachers reported having participated in professional development to enable them to support teachers of other subjects to develop literacy skills.

Figure 5.8 presents the percentages of English teachers who reported being involved in setting targets for literacy in their school by DEIS status, fee-paying status and school sector and breakdown. Overall, 68.5% of teachers reported being involved in setting targets for literacy for their school. The percentage in schools with DEIS status is considerable at 81.4%

and compares with 63.4% for non-DEIS schools. Percentages are more consistent across the school sector/gender categories.

Figure 5.8 Percentage of English teachers that have been involved in setting targets for literacy in their school



See Appendix Table A5.14.

A large proportion of English teachers (76.5%) reported that their schools had a clear plan to improve the literacy skills of lower-achieving students, while 68.4% of teachers reported that the presence of a literacy link teacher succeeded in increasing the focus on literacy across different subjects. A similar proportion (63.5%) reported that they received strong support from leaders in their school to support the development of literacy skills across all subjects.

5.4 SUMMARY

This chapter focused on the National Strategy for Literacy and Numeracy 2011-2020, including whether targets for literacy were achieved, and how schools and teachers in PISA 2018 viewed the different initiatives and activities associated with the Strategy. This chapter referenced the Student Questionnaire, School Questionnaire and the English Teacher Questionnaire, all of which included national questions relating to the Strategy.

Student targets

The National Strategy for Literacy and Numeracy 2011-2020 included targets for performance in reading literacy relating to percentages of students at particular proficiency levels. Some of the targets relating to PISA that had been set out in 2011 had been achieved by PISA 2015 (37.1% were reading at Level 4, compared with the target of 34.0% set out in 2011) and updated targets were included in a 2017 Interim Review. In PISA 2018, the percentage of students below Level 2, the baseline level of reading skills, was 11.8%, which is above the target of below 8.5%, and indicates that the target has not yet been met. However, the feasibility of achieving the target of 8.5% should be considered, since just two PISA countries had lower percentages below Level 2 than Ireland (Singapore at 11.2% and Estonia at 11.1%), neither of which was significantly lower. The percentage of students at or above Level 4 (high-achieving students) was 36.2%, which was below the revised target of 40.0%, again indicating that the target has not been met. However, the new 2017 target for the

percentage of students at or above Level 5 (the highest achievers) was 12.0% and in PISA 2018, 12.1% of students were at or above Level 5, indicating that the target had been met. It might be noted that several high-performing countries in PISA have proportionately more students achieving at this level, including Singapore (25.8%) and Canada (15.0%).

The Interim Review also introduced specific targets for DEIS schools. Due to issues with the 2017 targets, adjusted targets were set out by Gilleece et al. (2020). In DEIS schools, 21.8% of students in PISA 2018 performed below Level 2, which is 4.8% off the adjusted target of 18.0%, and almost double the proportion performing below Level 2 across all schools. One fifth (21.2%) were at or above Level 4 and 5.5% were at or above Level 5. Both were below their respective targets of 26.0% and 8.0%. Hence, all three adjusted targets for DEIS schools have yet to be met, though Gilleece et al. (2020) noted that the 18% target was within the 95% confidence interval around the estimate for 2021 (17.8%, 25.8%).

The Interim Review also included targets to increase the proportions of students reading daily for enjoyment. The targets were to increase the proportion of males reading daily to at least 60% and the proportion of females to at least 70% by 2020. Since 2009, the proportion of students reading daily has continually decreased, reflecting an international trend. In PISA 2018 in Ireland, 60.6% of females and 43.9% of male students reported reading daily for enjoyment. These are below their respective targets.

The 2017 Review also includes actions to support parents' in developing their child's literacy development more generally, and a key indicator of this is the percentage of parents who discuss their child's progress in school several times a week. The Review refers to a target of 60%, which was not achieved in either PISA 2015 (56.1%) or PISA 2018 (51.9%).

School principals' reports

The School Questionnaire included a number of questions designed to assess implementation of the National Literacy and Numeracy Strategy 2011-2020. Nearly all students were in schools whose principal indicated that they assessed English literacy at the start of Junior Cycle (96.0%), undertook school self-evaluation in relation to literacy/numeracy achievements of students (95.4%), and had a clear plan on how to improve the literacy of students in general across the curriculum (93.0%) and the literacy of students with additional learning needs (93.7%). A somewhat lower proportion (81.4%) reported that they had a plan on how to improve the use of assessment and evaluation to support literacy.

Nearly three quarters of students (73.4%) were in a school where there was a literacy co-ordinator, with the highest proportion reported by DEIS schools (83.8%). A high proportion, 80.3%, were in schools that had a group to co-ordinate and support literacy development within the school. In this case, principals in Girls Secondary schools reported the highest percentage (87.1%).

Almost all students were in schools whose principals reported that teachers of all subjects had the skills to develop literacy (93.4%) and that they used these skills to help students develop and improve their literacy skills (96.5%). A high proportion reported that there was a culture of cooperation and best-practice sharing in relation to literacy (91.4%), that there was good cooperation among staff to improve literacy (89.6%) and that staff had a clear understanding of the goals of the Strategy (88.3%). The lowest proportion was reported for

the inclusion of parents and the wider community to support children's literacy (64.6%) while fewer than three quarters (71.1%) reported using the National Strategy targets to create school-level targets.

Principals were asked to comment in writing on factors that contributed to or hindered improvements in literacy. In relation to improvements, 24.3% of principals reported that a school action plan contributed, followed by school self-evaluation (19.3%), teachers' acceptance and implementation of the L & N Strategy (19.2%), a literacy team (17.4%) and an integrated approach (16.1%). For factors which hindered improvements to literacy, lack of time was mentioned most by more than two in five principals. Other factors included initiative overload (18.5%), other demands on teachers (8.9%) and overuse by students of social media/technology (8.9%). A focus on the new Junior Cycle was mentioned by 8.3%, even though 'being literate' is a key skill in the Junior Cycle framework (DES, 2015).

Principals were also asked to indicate their level of concern about students' ability to access the curriculum due to low literacy skills. Principals of fewer than 5% of students reported that they were greatly concerned, with this proportion increasing to 15.0% in DEIS schools. Nearly one third of students' principals reported that they were either greatly or moderately concerned. Principals of Community and Comprehensive schools reported the highest combined proportion (42.0%).

Teachers of Junior Cycle English

Junior Cycle English teachers in PISA 2018 schools completed a questionnaire which included questions relating to the Literacy and Numeracy Strategy. More than one in five English teachers reported having worked as a Literacy Link teacher. The proportions reported varied by school sector/gender composition, with 15.9% of teachers in Girls Secondary schools and 24.6% in ETB/Vocational schools reporting that they had undertaken this role.

When asked about elements of professional development specifically linked to the Strategy, approximately two fifths of teachers reported that they attended some hours related to teaching English throughout the curriculum (39.5%) and to Literacy Link courses and cluster meetings (39.9%).

The Strategy contains a goal of including a variety of literary and non-literary texts in the Junior Cycle English classroom, and the Junior Cycle English curriculum introduced in 2014, for first examination in 2017, is designed to support this. While almost all teachers reported including fiction, drama and poetry in several or almost all of their Third-year English classes, over one half reported including film and/or televisual media and opinion texts. Over one third of teachers reported using non-literary texts with similar frequency.

English teachers were asked to report the proportion of Third-year students struggling with different areas of communication in English. According to their English teachers, students struggled most with writing, followed by listening, reading and speaking. Over one quarter of teachers reported that more than one in five students in their classes struggled with writing. Across all areas of communication, higher proportions were reported by teachers in DEIS school than in non-DEIS schools.

When asked about their views on teaching literacy, high proportions agreed or strongly agreed that they had the necessary skills to meet the majority of students' literacy needs

(97.4%), and understand how to develop basic (90.9%) and advanced (88.8%) literacy skills. Almost three-quarters (71.8%) of teachers reported having the skills to improve the literacy of students with special education needs, while 55.1% reported that they had the skills to improve the literacy of students for whom English/Irish is not their first language.

Most teachers agreed or strongly agreed that there was a culture of sharing best practice on how to improve students' literacy at school level (84.4%) and that the teaching staff as a whole took an active and integrated approach to addressing the literacy needs of students (77.4%). The proportions were consistent by DEIS status, fee-paying status and school sector/gender breakdown.

English teachers were also asked about their involvement with and views on the National Literacy and Numeracy Strategy. Three quarters of English teachers reported familiarity with the 2011 Strategy while half reported that they were aware of the Interim Review and 39.8% reported that they had read it. Nearly all teachers, 91.8%, reported that they were active in helping to improve students' basic literacy skills. Lower proportions reported that they had participated in professional development that enabled them to support teachers in other subject areas to teach literacy skills (38.9%) and that they were called on by other teachers to provide advice on teaching literacy in their subject areas (33.9%).

Chapter 6 – Teaching, Learning, Curriculum and Assessment of English at Junior Cycle

As in PISA 2009, a national questionnaire for teachers of English was administered to Junior Cycle English teachers in PISA 2018. The main purposes of the questionnaire were to gain insights into teachers' instructional practices and to identify teachers' engagement in continuous professional development (CPD) relating to the teaching of English and their CPD needs. The 2018 questionnaire also included questions relating to curriculum and assessment in Junior Cycle English and sought teacher views on the National Strategy to Improve Literacy and Numeracy, 2011-2020. Responses to questions about the Strategy were described in Chapter 5.

In 2018, 157 schools participated in PISA and 155 returned at least one completed teacher questionnaire. Across all schools, 963 of 1134 targeted teachers returned a completed questionnaire, giving a response rate of 85%, a marked increase from 67% in 2009.

As the teacher questionnaire is a national instrument, there are no comparative international data. Teacher weights were based on the final school weights from the PISA database, adjusted for teacher non-response within schools. It was not possible to link teacher responses to student achievement. However, since the data have been weighted, they can be assumed to be indicative of national figures.

6.1 TEACHER EXPERIENCE, PROFESSIONAL DEVELOPMENT AND TIME ALLOCATION

This section examines three aspects of teachers' experience in the teaching of English: their demographic profile (including coursework), their professional development, and the ways in which they distribute time in their Junior Cycle English classes.

6.1.1 Teacher demographics

In 2018, nearly three quarters of English teachers were female (73.4%), which is a slightly greater gender imbalance than reported in 2009 (71.0%). Over one third of teachers (34.7%) had taught for 1-8 years, 30.2% for 9-16 years and 35.0% for 17 years or longer. Most teachers had taught for six months or more in either one (27.8%), two (29.7%) or three (20.7%) schools, with 4.4% having taught in more than five schools. When asked about their employment status, 71.2% reported having permanent employment. Over one in ten (12.4%) reported that they were on a fixed-term contract for a period of more than one school year and 16.4% reported being on such a contract for one year or less. Most teachers (90.7%) reported working full time (22 hours), 8.6% reported working half hours or more (11-20 hours) and the remaining teachers (0.7%) reported working less than 50% of full-time hours (fewer than 11 hours). Over three quarters of teachers (76.1%) reported that up to

half of their timetabled hours involved teaching English to different year groups, while 1.7% reported that teaching English accounted for their full timetabled hours. It should be noted that teachers often have other resource hours or responsibilities which can be part of their timetable.

Teachers were asked various questions related to their educational qualifications. In relation to undergraduate studies, 90.3% reported holding a primary degree with English in final year (at least 30% of time allocated to English), 4.7% reported holding a primary degree with English in either first or first and second years and 4.4% reported holding a primary degree with other subject configurations. Over three fifths of teachers completed their initial third-level qualification since 2000 (36.1% in the 2000s and 25.5% in the 2010s) while the remaining teachers completed their qualification in the 1990s (23.6%), 1980s (12.3%) or 1970s (2.6%). Teachers were also asked what postgraduate or other qualifications they had obtained. In 2014, the Professional Diploma in Education (PDE) was replaced by the Professional Master of Education (PME) as the primary route for teachers entering the profession. Over 70% of teachers reported holding either a Higher Diploma or Postgraduate Diploma in Education while 17.8% reported holding a Professional Master of Education. A very small proportion reported holding a different postgraduate degree related to English (1.3%) or a postgraduate degree related to the teaching of English (1.7%).

A new curriculum specification for Junior Cycle English was introduced in 2014 with the first Final Assessment in June 2017. As part of the English Teacher Questionnaire, teachers were asked whether they had taught English to Junior Cycle students before the 2014-2015 academic year. Most, 81.3%, reported that they had, meaning that they had also taught under the pre-2014 Junior Certificate English syllabus, while others had probably taught both the pre-2014 syllabus and the 2014 specification in the period 2014-16.

6.1.2 Professional development

English teachers were asked whether they had completed continuous professional development (CPD) relating to Junior Cycle English. Table 6.1 presents the proportions of teachers who completed some CPD related to Junior Cycle English, including a breakdown by DEIS, fee-paying status, and school sector and gender composition. Most teachers (91.9%) reported that they had attended CPD on the new Junior Cycle English specification, with consistently high proportions across all sub-categories. When asked whether they had attended external CPD related to Classroom-Based Assessment (CBAs)/Assessment Tasks for Junior Cycle English, the proportion was substantially lower (67.4%). This pattern was consistent across all school categories. Approximately two in five teachers reported that they had attended CPD relating to Junior Cycle English Final Examination, while almost 60% reported having attended SLAR meetings[31].

31 Subject Learning and Assessment and Review meetings, where teachers review students' Classroom Based Assessments against fixed external standards.

Table 6.1 Percentage of English teachers who have completed some hours of CPD relating to Junior Cycle (JC) English, by school DEIS status, fee-paying status and school sector/gender composition

	The new Junior Cycle English Specification	External CPD related to Classroom-Based Assessments (CBAs) / Assessment Tasks for JC English	Junior Cycle English Final Examination	Attendance at SLAR Meetings
All English Teachers	91.9	67.4	42.0	59.1
DEIS Status				
DEIS	92.8	69.6	37.9	72.4
Non-DEIS	91.7	66.5	43.7	53.7
Fee-Paying Status				
Fee Paying	84.0	65.1	40.8	43.9
Non-Fee Paying	92.5	67.6	42.1	60.2
School Sector/ Gender Composition				
Girls Secondary	92.2	65.7	38.2	43.3
Boys Secondary	88.2	63.6	41.4	39.5
Community/ Comprehensive	93.7	68.9	42.8	62.5
Mixed Secondary	89.8	68.4	46.6	54.2
ETB/Vocational	94.2	69.1	41.6	81.8

Almost one third of teachers (31.3%) reported that they had completed some professional development in teaching English using digital or information and communications technology (ICT). In the questionnaire, teachers were also asked whether they would like to attend additional professional development on how to further integrate digital technology in their English classes. Over half of teachers (54.2%) strongly agreed, while a further 34.6% agreed that they would like to do so, which suggests an interest in further professional development in this area. As noted below, there has been an increase in the use of digital texts in English lessons in recent years.

6.1.3 Allocation of time in Junior Cycle English classes

Teachers were asked about the percentage of class time spent on different activities in a typical week. They were provided with three activities: teaching and learning, keeping order in the classroom, and administrative tasks. Almost all teachers reported that the majority of class time was spent on teaching and learning. Over half of teachers (50.7%) reported that it made up 90-100% of class time and an additional third (33.8%) reported 80-89%. The proportion of teachers who reported that it made up less than 70% of class time is higher in DEIS schools (9.8%) than in non-DEIS schools (4.0%) (Appendix Table A6.1). There were also differences reported across school sector/ gender composition as less than one percent of teachers in Girls Secondary schools reported that teaching and learning made up less than 70% of classroom time, in comparison to 9.7% of teachers in Boys Secondary schools (Appendix Table A6.1).

Almost two in three teachers (63.3%) reported that keeping order in the classroom took up less than 10% of class time and a further 27.5% reported between 10-19%. Fewer than one

in ten teachers reported a percentage higher than 20% of class time. Across all schools, only 3.2% of teachers reported that keeping order in the classroom made up a third or more of class time but in DEIS schools the proportion was twice as large (6.3%) (Appendix Table A6.2).

Administrative tasks were reported to take up less than 10% of class time by 62.2% of teachers and a further 27.4% reported that these took up 10-14% of class time. Teachers in DEIS schools, non-fee-paying schools and Boys Secondary schools reported spending more time on administrative tasks, compared with teachers in non-DEIS schools, non-feepaying schools and Girls Secondary schools (Appendix Table A6.3).

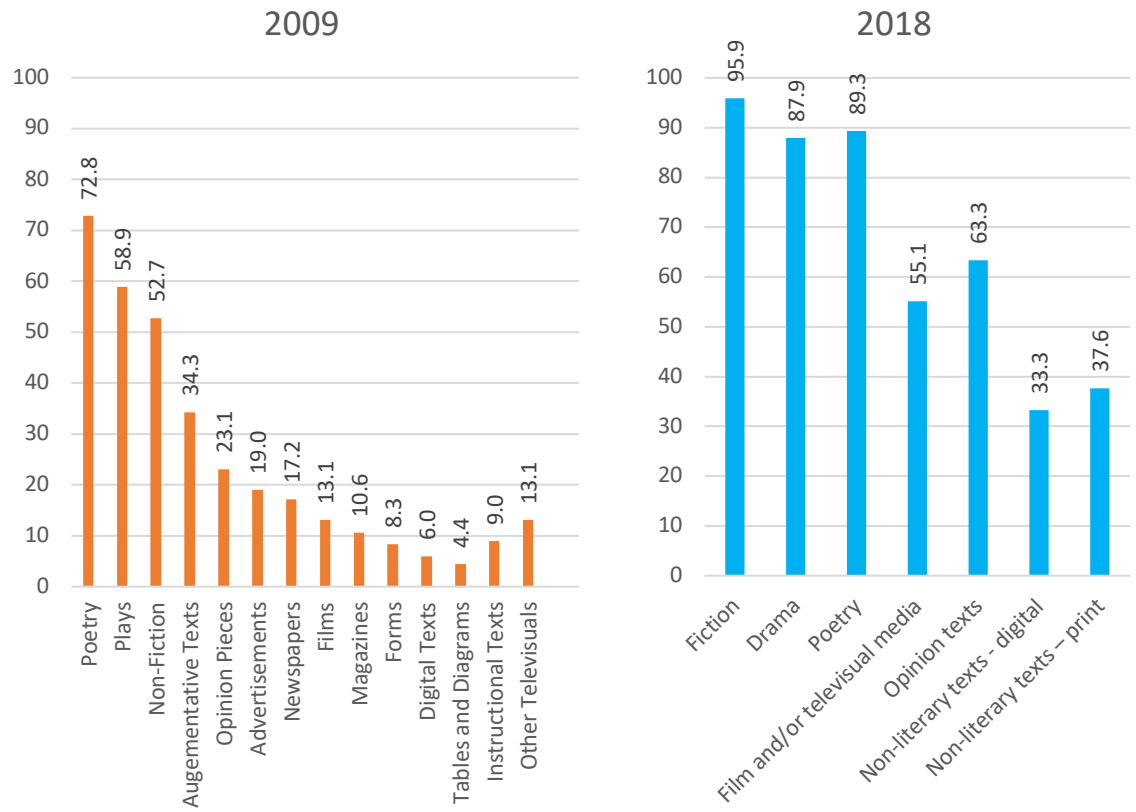
6.2 TEACHING AND LEARNING IN JUNIOR CYCLE ENGLISH CLASSES

In this section, the types of materials used in the English classroom are explored and access to and use of digital devices by students in the English classroom are considered. Finally, the proportions of students who struggle with different aspects of English as reported by English teachers are examined.

6.2.1 Materials used in English lessons

English teachers were asked to indicate how often (never or almost never, in a few classes, in several classes or in almost all classes) they used various materials in their English lessons. A similar question was asked in PISA 2009 as part of the English Teacher Questionnaire, though with different response options. Figure 6.1 shows the percentages of English teachers who included various materials at least weekly in 2009 and in several or almost all classes in 2018. In 2018, the materials used most frequently included fiction (95.9%), poetry (89.3%) and drama (87.9%). The inclusion of texts such as film and/or televisual media and opinion texts in the 2018 question may be reflective of a change in emphasis in the new specification for English at Junior Cycle. Over half of teachers reported using these types of texts in several or almost all classes. Non-literary texts in digital and print formats were reported to be used least frequently (33.3% and 37.5% respectively). In 2009, as in 2018, fiction (78%), poetry (71%) and drama (60%) were also reported to be studied most often. The proportion reported for digital texts was less than 10%. Hence, the 2018 figure of 33.3% suggests a marked increase in the use of digital texts in English classes.

Figure 6.1 Percentage of English teachers who used various materials at least weekly in 2009 in English classes and in several or almost all classes in 2018



6.2.2 Use of digital devices by students in English classes

The English Teacher Questionnaire included questions related to students' use of digital devices in Third-year English lessons. Overall, very high proportions of teachers reported that their students never or almost never had access to laptops (88.1%), tablets (83.0%) or e-readers (93.9%) (Appendix Table A6.4). With regard to access to desktop computers, 62.0% reported that these were never or almost never available, and a further 32.7% reported availability in a few classes. Just under 7% of teachers (6.5%) reported that tablets were used in almost all classes, compared with 1.1% for desktop computers, 1% for e-readers, and 0.8% for laptops. The proportion of English teachers who reported their students having access to digital devices in several or almost all classes is much lower, in all cases, in Boys Secondary schools than in all other school types (Appendix Table A6.5).

Teachers were asked how much time their students spent on digital devices in Third-year English classes (Table 6.2). Most teachers (83.2%) reported that their students spent less than 10% of class time on digital devices. Fee-paying schools and Girls Secondary schools reported the least use of digital devices while DEIS schools reported using digital devices more often than non-DEIS schools (Table 6.2). Overall, the data indicate that use of digital devices has not been fully integrated into English classes in most cases, notwithstanding increased usage of digital texts.

Table 6.2 Percentage of English teachers by how much time students spend on digital devices in Third-year English classes, by school DEIS status, fee-paying status, and school type/gender composition

	Less than 10%	11-20%	21-50%	More than 50%
All English Teachers	83.2	10.5	4.8	1.5
DEIS Status				
DEIS	75.4	14.4	7.5	2.7
Non-DEIS	86.3	8.9	3.8	1.0
Fee-Paying Status				
Fee Paying	90.3	9.7	0.0	0.0
Non-Fee Paying	82.7	10.5	5.1	1.6
School Sector/ Gender Composition				
Girls Secondary	88.0	7.3	4.7	0.0
Boys Secondary	85.2	14.8	0.0	0.0
Community/Comprehensive	86.5	10.5	3.0	0.0
Mixed Secondary	85.0	7.7	4.8	2.4
ETB/Vocational	75.9	11.9	8.6	3.6

When asked whether they would like their students to spend more time on digital devices, 53.3% responded that they would, while 34.5% responded that they think students spend the right amount of time on digital devices in their classes. Only 12.2% responded that students should spend less time using digital devices in their English classes.

Table 6.3 Percentage of Third year teachers reporting the impact of various factors on integrating digital technologies, all schools

	Negative Impact	No Impact	Positive Impact
The availability of digital devices for students	66.4	22.2	11.3
The internet/Wi-Fi connection	33.3	45.2	21.5
The quality of digital devices	39.6	47.6	12.8
The class time available	45.9	41.0	13.1
Support from school management	14.4	56.7	29.0
Preparation for Classroom-Based Assessments, Assessment Tasks and Final Assessment	27.0	35.5	37.4
Ability to access professional development on digital technology	30.9	45.9	23.3
Availability of technology tools to integrate into my teaching	40.6	31.4	27.9
Availability of suitable digital content to include in my lessons	25.6	40.2	34.2
My understanding of how digital devices work	17.2	44.5	38.4
My experience of using digital devices outside of school	12.9	42.1	45.0
My experience of integrating digital devices into my teaching	19.9	38.2	41.8

Teachers were presented with a range of factors and asked to indicate whether each one had a positive, negative or no impact on the time students spend on digital devices in English classes (Table 6.3). The unavailability of digital devices for students was the only factor which a majority of teachers reported as having a negative impact (66.4%). The factors most often selected by teachers as having no impact were the internet/Wi-Fi connection (45.2%) and support from school management (56.7%). Two factors were regarded by very small proportions of teachers as having a positive impact - the quality of digital devices (12.8%) and class time available (13.1%) (Table 6.3). Factors related to teacher knowledge were endorsed by large proportions of teachers as having a positive impact, including preparation for Junior Cycle English assessment tasks (37.4%), understanding how digital devices work (38.4%), experience of using digital devices outside of school (45.0%) and experience of integrating digital devices into their teaching (41.8%) (Table 6.3).

6.3 JUNIOR CYCLE ENGLISH CURRICULUM

A new Junior Cycle curriculum was introduced on a phased basis in 2014 based on the *Framework for the Junior Cycle (DES, 2012a)*. The framework is intended to enable schools 'to provide a quality, inclusive and relevant education with improved learning outcomes for all students' (DES, 2012a, p.1). The framework comprises 24 statements of learning supported by eight key skills. Junior Cycle English was introduced to first years in 2014 as part of the first of five implementation phases. Students who entered First year in 2019-2020 were the first group to engage with new specifications in all subjects.

This section examines the level of agreement in the understanding and implementation of the 2014 Junior Cycle English curriculum specification as reported by English teachers. In all cases in this section, teachers were asked about the extent with which they agreed with a range of statements relating to the Junior Cycle English curriculum.

6.3.1 Junior Cycle English curriculum specification

English in Junior Cycle aims to develop students' knowledge of language and literature, to consolidate and deepen their literacy skills and make them more self-aware as learners (NCCA, 2018). Junior Cycle English comprises seven statements of learning (Table 6.4) underpinned by the eight key skills.

Table 6.4. Statements of Learning (SOL) related to Junior Cycle English

Statement	Explanation
SOL 1	The student communicates effectively using a variety of means in a range of contexts in L1 (first language)
SOL 3	The student creates, appreciates and critically interprets a wide range of texts
SOL 4	The student creates and presents artistic works and appreciates the process and skills involved
SOL 6	The student appreciates and respects how diverse values, beliefs and traditions have contributed to the communities and culture in which she/he lives
SOL 16	The student describes, illustrates, interprets, predicts and explains patterns and relationships
SOL 23	The student brings an idea from conception to realisation
SOL 24	The student uses technology and digital-media tools to learn, communicate, work and think collaboratively and creatively in a responsible and ethnical manner.

Source: NCCA, 2018, p. 6.

The specification for Junior Cycle English focuses on the development of language and literacy in and through three strands: Oral Language, Reading, and Writing (NCCA, 2018). Due to the integrated nature of language learning, the outcomes for each strand are grouped with reference to three elements:

- Communicating as a listener, speaker, reader and writer
- Exploring and using language, and
- Understanding the content and structure of language.

Table 6.5 presents the proportion of English teachers who strongly agreed or agreed with statements relating to the Junior Cycle English curriculum specification. Appendix Table A6.6 presents the breakdown by DEIS status, school fee-paying status and school sector and gender composition. A strong majority of teachers (88.9%) indicated that they agreed or strongly agreed that they place a strong emphasis on teaching basic literacy skills in their Junior Cycle English classes, while an even higher proportion (97.5%) reported taking an integrated approach to the teaching of oral language, reading and writing in their Junior Cycle classes. Most English teachers (81.2%) agreed or strongly agreed that the specification structure with the three strands and three elements aided them in planning their English lessons.

Table 6.5. Percentage of English teachers who 'strongly agree' or 'agree' with the following statements related to the Junior Cycle English curriculum specification

Percentage of English teachers indicating agreement with the following statements:	**Strongly Agree**	**Agree**
Students engaging individually (or in pairs) with content on digital devices enhances student learning.	14.7	57.8
There is continuity in our school between the primary English language curriculum and the curriculum for First year students.	9.3	58.3
I place a strong emphasis on teaching basic literacy skills in my Junior Cycle English classes.	31.4	57.5
I find it helpful that some outcomes in the curriculum specification are highlighted for First years.	31.2	58.8
I take an integrated approach to the teaching of oral language, reading and writing in my Junior Cycle classes.	50.2	47.3
There is currently a strong and sustained commitment on the part of senior leaders to improve students' literacy in my school.	28.7	49.0
I teach a range of digital literacy skills to my Junior Cycle students.	8.4	39.5
Discussion and debate often occur in my Junior Cycle English classes.	50.6	46.1
Junior Cycle English provides opportunities for students to develop their creativity.	45.8	45.1
My Junior Cycle students regularly undertake tasks in English that require more than a week to complete.	17.8	42.7
I often build my Junior Cycle English lessons around key themes.	32.6	54.0
Curriculum elements and learning outcomes, such as exploring and using language, help me structure my English lessons.	24.2	57.0

There is a strong focus in the English specification on the oral dimension of language, including the importance of learning though oral language (NCCA, 2018). Students should have the opportunity to explore language and ideas as much through thinking and talking as through listening and writing. When asked whether discussion and debate occurred often in their Junior Cycle English classes, nearly all teachers (96.7%) agreed or strongly agreed that this happened (Appendix Table A6.6).

The specification for Junior Cycle English mirrors the specification for the primary language curriculum, and this is intended to provide continuity for learners as they transition from primary to post-primary (NCCA, 2018). However, when asked, only 9.3% of teachers strongly agreed and a further 58.3% agreed, that there was continuity in their school between the Primary English Language Curriculum and the curriculum for First-year students. This may reflect, at least in part, the fact that, while the new Primary English Language Curriculum was introduced on a phased basis, full rollout did not occur until 2019 (i.e., after PISA 2018). The specification aims to further support this link between the Primary Language Curriculum and Junior Cycle English by including a specific set of learning outcomes for First years. This is denoted by an open circle beside the learning outcome. The majority of teachers, 90.0%, agreed or strongly agreed that they found the inclusion of specific outcomes for First years helpful (Table 6.5).

Junior Cycle English aims to provide students with 'a wide and varied experience of texts that stimulate, engage, inspire and challenge them' (NCCA, 2018, p. 10). The term *text* applies to more than communication in written format. It also includes oral, visual, digital or multimodal formats. Multimodal texts combine language with other systems for communication, such as print text, visual images, soundtrack and the spoken word (NCCA, 2018). According to the specification, 'the engagement with various types of text(s) is central to the development of language and literacy' (p. 10).

Teachers of Junior Cycle English are expected to plan to account for all students and provide a wide range of opportunities for students 'to have meaningful and stimulating language experiences across a broad range of contexts' (NCCA, 2018, p. 10). The Junior Cycle English specification suggests the possibility of organising a topic or year's work around key themes. When asked to respond to a statement that they build Junior Cycle English lessons around key themes, 96.6% agreed or strongly agreed (Table 6.5).

The Junior Cycle English specification also aims to provide opportunities for students to develop their creativity. Junior Cycle English is expected to include many opportunities for students 'to create their own texts in response to those studied and as part of their general language and literacy development' (NCCA, 2018, p. 10). When asked, 90.9% of teachers agreed or strongly agreed that Junior Cycle English provides opportunities for students to develop their creativity (Table 6.5).

One of the statements of learning in the English specification relates to the use of technology and digital media to learn, communicate, work and think collaboratively and creatively in a responsible and ethical manner. Most teachers agreed or strongly agreed that they taught basic literacy skills in their Junior Cycle English classes but when asked about teaching digital literacy skills, less than half (47.9%) reported some level of agreement (Table 6.5). However, nearly three quarters (72.5%) of teachers agreed or strongly agreed that engaging with content on digital devices enhances student learning (Table 6.5).

The English specification highlights the idea of collaboration and working in groups by referencing it in the key skills, statements of learning and learning outcomes. English teachers were asked to indicate the extent of their agreement with the statement that students engaged more frequently in group work. A quarter of teachers (25.2%) strongly agreed and over half of teachers (56.2%) agreed that students engage in group work more frequently in Junior Cycle English (Table 6.6).

6.3.2 Implementation of the specification

One question in the English Teacher Questionnaire related to the implementation of the Junior Cycle English specification and asked teachers to indicate their level of agreement (strongly agree, agree, disagree, strongly disagree) about statements describing the impact of the specification, compared with its predecessor (Table 6.6).

Table 6.6. Percentage of English teachers who 'strongly agree' or 'agree' with various statements related to the 2014 Junior Cycle English specification, compared with its predecessor

Percentage of English teachers who 'strongly agree' or 'agree' with the following statements:	%
Literacy	
There has been an improvement in students' grammar and spelling.	19.8
Students' oral language skills (e.g., engaging in class discussions) have improved.	83.3
Type of Text(s)	
Students read and write using a broader range of texts and genres.	71.9
Students read and create more multi-modal texts during English classes.	70.4
Differentiation	
Students for whom English is an additional language are learning more in English classes.	28.3
Higher-ability students are stretched to a greater extent than before.	34.6
Student Engagement	
Students show higher levels of motivation during English classes.	40.9
Students are better able to manage their own learning and set realistic learning targets.	44.0
Other	
Students engage more frequently in working in groups.	81.6
Parents have a better understanding of the requirements of the specification and assessments.	13.9
More formative feedback is provided to students on their progress.	77.7

See Appendix Table A6.7.

Referring to the statements relating to literacy, one fifth of teachers agreed or strongly agreed that there had been an improvement in students' grammar and spelling, but a much larger proportion (83.3%) reported an improvement in oral language skills. The latter finding is encouraging, and may reflect the stronger emphasis on oral language in both the English specification and in Classroom-Based Assessments. Many English teachers reported that their students read and wrote using a broader range of texts and genres (71.9%), including multimodal texts (70.4%). In the area of differentiation, one third of teachers (34.6%) reported that higher-ability students were challenged more than before, while 28.3% reported that students for whom English is an additional language were learning more in English classes.

Teachers were also asked to respond to statements relating to student engagement. Overall, 40.9% reported that students showed higher levels of motivation and a similar proportion (44.0%) reported that students were better able to manage their own learning and set realistic targets. Group work was reported to occur more frequently by over four fifths of teachers (81.6%) and 77.7% reported that students received more formative feedback on their progress. Only 13.9% indicated that parents had a better understanding of the requirements of the specification and assessments.

6.4 ASSESSMENT PRACTICES IN JUNIOR CYCLE ENGLISH

The Junior Cycle places a strong emphasis on assessment as part of the learning process. Assessment in Junior Cycle English is intended to 'optimise the opportunity for students to become reflective and active participants in their learning and for teachers to support this'

(NCCA, 2018, p. 16). In part, this rests upon 'the provision for learners with opportunities to negotiate success criteria against which the quality of their work can be judged by peer, self, and teacher assessment, and upon the quality of the focused feedback they get in support of their learning' (NCCA, 2018, p. 16). This allows students to manage their own learning and motivation.

The assessment of English includes two Classroom-Based Assessments (CBAs) and a Final Assessment. In addition, the second CBA is linked to a written Assessment Task that is marked, along with the Final Assessment, by the State Examinations Commission. The first CBA involves oral communication linked to a topic chosen and presented by an individual student or group. It is assessed through the completion of a SLAR (Student Learning and Assessment Review) meeting where staff bring their own examples of students' work and compare their judgements with other colleagues (NCCA, 2019).

The second CBA is a collection of a student's texts which can be presented in a wide range of formats including hand-written, digital or multi-modal, and is also assessed at a SLAR meeting. The Assessment Task is completed after the second CBA and is intended to draw on the knowledge and skills developed through the completion of the second CBA. It is submitted to the State Examinations Commission for marking along with the Final Assessment for English.

The final assessment is a two-hour written examination completed at the end of Third year. It is offered at Higher and Ordinary levels and assesses a selection of the learning outcomes outlined in the specification.

Table 6.7. Percentage of English teachers who 'strongly agree' or 'agree' with the following statements related to assessment practices in Junior Cycle English classes

Percentage of English teachers who 'strongly agree' or 'agree' with the following statements:	**Strongly Agree**	**Agree**
The Junior Cycle curriculum and assessments challenge the most-able students in my English classes.	23.8	40.5
My Junior Cycle English students set clear targets for their learning based on feedback I provide to them.	14.3	60.2
SLAR meetings for English have helped my own understanding of assessment.	24.9	53.6
I use the results of standardised tests of reading administered to First/Second year students to plan my teaching.	10.0	40.0
I work with other teachers of English in my school to improve the assessment of English at Junior Cycle.	40.1	53.5
I develop and administer tasks and tests that are my own or are developed in collaboration with other teachers in my school.	47.3	48.2
Students read, critique, and respond to digital texts in my Junior Cycle English classes.	17.8	48.7
Digital assessments (e.g., e-Portfolios, tests on computer) contribute to the successful planning and teaching of my Junior Cycle English classes.	6.5	21.9

Table 6.7 presents the proportion of English teachers who reported that they 'strongly agreed' or 'agreed' with statements related to assessment practice in Junior Cycle English classes. When asked whether Junior Cycle English students set clear targets for their learning based

on the feedback provided by teachers, three quarters (74.5%) of the English teachers strongly agreed or agreed.

The purpose of assessment and reporting at Junior Cycle is to support learning. It is an ongoing process throughout Junior Cycle. Most teachers (93.6%) strongly agreed or agreed that collaborating with other teachers of English improved the assessment of English at Junior Cycle and a similar proportion (95.5%) strongly agreed or agreed that they developed and administered tasks and tests that are their own or were developed with other teachers in the school. Only 28.4% reported that digital assessments such as tests on computers and e-Portfolios were used in their Junior Cycle English classes (Table 6.7). Over three quarters (78.4%) of teachers reported that SLAR meetings for English were useful to aid their own understanding of assessment. It is noteworthy that less than one quarter of English teachers (23.8%) strongly agreed that the Junior Cycle English curriculum and assessments sufficiently challenge the most-able students.

6.5 SUMMARY

Teacher Experience, Professional Development and Time Allocation

In 2018, there were almost three times more female teachers of English (73.4%) than male teachers (26.6%). Similar proportions reported teaching for fewer than eight years (34.7%), between nine and 16 years (30.2%) and over 16 years (35.0%), while most teachers had taught in one (27.8%), two (29.7%) or three (20.7%) schools. Most teachers reported having a permanent post (71.2%) and to be working full time (90.7%). Most teachers (90.3%) reported holding a primary degree that included English as a final year subject and over half of teachers reported that they completed their primary degree in the last 20 years (since 2000). In relation to postgraduate qualifications, over 70% of teachers reported holding either a Higher Diploma or Postgraduate Diploma in Education, while a further 17.8% reported holding a Professional Master of Education (introduced to replace the Postgraduate Diploma in Education in 2014).

Professional development relating to the new Junior Cycle English specification was completed by nearly all teachers (91.9%) but the proportion was lower for external CPD related to classroom-based assessments (67.4%), and Junior Cycle English final examination (42.0%), which are not provided directly by the DE. Just under three in five teachers (59.1%) reported that they had participated in another type of professional development, attendance at SLAR meetings. There was little variation reported in the proportion by DEIS status, fee-paying status and school sector and gender composition, though more teachers in ETB/Vocational schools reported that they had attended SLAR meetings.

Teachers reported allocating most of their class time on teaching and learning with most teachers reporting that it made up over 80% of class time. Keeping order in the classroom was reported to take less than 20% of class time by most teachers (90.8%). However, teachers in DEIS schools reported that this took up more class time. Administrative tasks were reported to take up less than 15% of class time by 89.6% of teachers but the proportion of class time used for this purpose was greater in DEIS schools compared with non-DEIS schools, in non-fee paying schools, compared with fee-paying ones, and in Boys Secondary schools, compared with other school types.

Teaching and Learning in Junior Cycle English Classes

When asked about the types of materials used in Junior Cycle English classes, fiction (95.9%) was reported to be used in most or all lessons, followed closely by drama (87.9%) and poetry (89.3%). Non-literary texts in digital (33.3%) and print (37.6%) formats were reported to be used least frequently. There is some indication that the use of digital texts has increased since 2009.

In relation to the use of digital devices by students in English classes, the majority of teachers reported that students never or almost never had access to digital devices. Tablets were reported to be used more than any other digital device. Most teachers reported that students spent less than 10% of class time on digital devices and teachers in DEIS schools reported greater use of digital devices by students. Over half of teachers would like their students to spend more time on digital devices in English classes, while a third of teachers felt they spend the right amount of time. When asked about the effect of various factors on the time students spend on digital devices in the English classes, the (lack of) availability of digital devices for students and a shortage of technology tools to integrate into teaching were reported to have the greatest negative impacts, while preparation for Classroom-Based Assessments and other assessment tasks and the teachers experience of using and integrating digital devices into their teaching were reported to have positive impacts.

Teachers were asked to estimate the proportions of students who struggled with different aspects of English. Teachers reported students having most difficulty with writing and least difficulty with speaking. Higher proportions of struggling students were reported by teachers in DEIS schools, non-fee paying schools, Boys Secondary schools and Community/ Comprehensive schools.

Junior Cycle English specification

A majority of teachers were in agreement that they placed a strong emphasis on teaching basic literacy in their Junior Cycle English classes (88.9%), used an integrated approach to including the three strands (97.5%) and used the structure of the specification to aid their planning (81.2%). Nearly all teachers reported that the inclusion of First year-specific learning outcomes in the English specification was helpful, that they build Junior Cycle English lessons around key themes and that the new curriculum allows more scope for creativity and collaboration.

Areas of student learning where improvement was observed by large percentages of teachers following the introduction of the specification included oral language skills, diversity in the types of texts and genres students had read and written, frequency of use of group work and availability of opportunities for formative feedback. Improvement was less evident in students' grammar and spelling, in the extent to which the specification challenged higher-ability students, and in students' motivation to learn.

Assessment Practices in Junior Cycle English

Most teachers (74.5%) agreed or strongly agreed that students set targets for their learning based on feedback received from teachers. Nearly all teachers reported that they administer tasks and tests that they have developed and/or were developed in collaboration with other

teachers (95.5%). Teachers reported that this collaboration with other teachers of English had improved the assessment of English at Junior Cycle. The use of digital assessments was less frequent, which may in part be due to the lack of availability of devices, as well as the fact that there is still a substantial component in the assessment of Junior Cycle English that requires students to write on paper.

Chapter 7 – Multi-level Model of Reading Literacy

Relationships between student achievement and single background characteristics outlined in earlier chapters in this report should be interpreted with caution, since many such characteristics are themselves inter-related. This chapter seeks to address this concern by describing how performance on PISA 2018 reading literacy varies when relationships with a range of school and student background characteristics are examined at the same time. This chapter presents an exploratory multi-level model of computer-based reading literacy in PISA 2018. Multilevel modelling allows for an examination of the simultaneous contributions of a range of background characteristics at both school and student levels. It also allows for a consideration of the extent to which various characteristics account for differences in achievement singly and in combination. For example, after accounting for differences in socio-economic backgrounds of schools and students, the extent to which students' reading attitudes and practices explain variation in achievement can be explained.

The chapter is divided into main four main parts. First, a general explanation of the methodology used in model building is presented. Second, a model of reading literacy based on PISA 2018 is presented in two stages – first, with all school- and student-level demographic, early-years, teacher- and parent variables included, and second, with the addition of student-level attitudes and students' use of strategies related to reading. Third, the model is compared with models of both print and digital reading developed for PISA 2009. Some broad conclusions are drawn in the final section.

7.1 GENERAL APPROACH TO MODEL BUILDING

The selection of background variables to include in the analyses described in this chapter gave priority to those that were deemed to have (i) policy and research relevance, (ii) good measurement properties and clear meaning, and (iii) low rates (generally less than 5%) of missing data. The variables included in the analyses were guided by the results of analyses presented in Chapters 3 and 4 of this report, and by earlier research affirming their relevance to reading literacy (e.g., Perkins et al., 2012).

The model described in this chapter was built in two steps. First, Level 2 (school-level) variables and Level 1 (student-level) variables relating to students' backgrounds/demographics, instructional support provided by the students' teachers, and their parents' engagement in reading and their support for their child's learning were entered into an interim model. Second, two additional clusters of student-level variables, literacy attitudes and practices, and literacy strategies, were added to produce a final model. This approach allowed for a consideration of the added value of students' literacy attitudes and practices, and their endorsement of literacy strategies, after controlling for other variables.

The datafile on which the interim model was based comprised 3,431 students (61.5% who took PISA 2018 in Ireland), while the final model was based on 3,159 students, or 56.6

percent. It was not possible to include all students in the models because of missing data on some questionnaire items. The manner in which the data are read into the modelling software results in the loss of an entire record where one or more relevant variables have a missing value. Given that the treatment of missing data by the software produces model results based on 56.6-61.5% of cases, we compared the characteristics of the records in the full PISA 2018 dataset to the subsets of records included in the modelling datasets. The results of these comparisons are shown in the Appendix (Table A7.2). Given the small differences between the samples, both in terms of representation and mean scores, it can be concluded that the model data subsets are representative of the full PISA 2018 dataset.

The following steps were followed in constructing the models:

1. An estimate of between-school variance in reading (the intra-class correlation) was obtained from the null model. This partitions the total variation in achievement into the proportion within and between schools.
2. All variables at school and student levels were tested individually for statistical significance by adding them separately to the null model. Variables that were not statistically significant ($p < .05$) were discarded from subsequent analyses.
3. In the case of categorical variables, a deviance difference test was conducted to evaluate the overall significance of the variable.
4. All remaining school characteristics were considered together and those that were not statistically significant were eliminated. Similarly, all remaining student-level variables were considered together, and those that were not statistically significant were eliminated.
5. All remaining school-level variables, and student-level variables (including those related to teachers and parents), were entered into a two-level interim model, except those variables related to students' reading attitudes and practices and their views on the value of literacy strategies.
6. The student-level variables relating to reading literacy attitudes and practices, and endorsement of reading strategies, were added to the model.
7. Interactions between gender and other student-level variables were examined for significance.
8. Interactions between school-level variables and gender (i.e., cross-level interactions) were evaluated for significance.

To ensure that the results are representative of the population of schools rather than the sample of participating schools and students, sampling weights were applied to school and student data in all analyses.

The modelling was implemented using Mplus software (Version 8, Muthén & Muthén, 2017). This software is designed to handle complex datasets such as that for PISA reading literacy, where students are clustered in schools, and 10 plausible values (estimates) for reading achievement are available for each student.

When the null model was run, the intra-class correlation was 0.172. Hence, 17.2% of the variance in student performance can be attributed to differences between the schools,

while the remainder (82.8%) can be attributed to within-school differences (i.e. differences between students).

7.2 MODEL OF PISA 2018 READING LITERACY

As noted earlier, individual variables for consideration for inclusion in the model were assessed separately for statistical significance, by individually adding them to the null model. Table 7.1 provides a full listing of the variables considered for inclusion, while correlations among the continuous student-level independent variables, and between independent variables and reading achievement, can be found in Appendix Table A7.1. At school level, two variables were considered: school DEIS status, and school average Economic, Social and Cultural Status (ESCS) – the composite OECD variable based on parents' highest occupational status, parents' highest level of education and home possessions (including books in the home) that had been aggregated to school level by averaging across all students taking the PISA assessment in a school. Table 7.1 (Column 3) shows that both variables were statistically significant when considered separately. Hence, these variables went forward for inclusion in the interim model (i.e., before the inclusion of student literacy-related variables).

The student variables considered for inclusion are also listed in Table 7.1 and were grouped into clusters as per below. More detailed information on each of these variables, including descriptive statistics, can be found can be found in Chapters 3 and 4.

- Student demographic/educational background variables, including student-level ESCS and its component variables (home possessions, home educational resources, cultural possessions, number of books in the home), immigrant/language status, attendance at preschool, frequency of absence from school, and risk of early school leaving.[32]
- Teacher instructional support, based on students' views of the frequency with which various activities/actions occurred in English classes;
- Parental engagement and support (as reported by parents), including the level of support provided by parents for students' learning, and parents' own engagement in reading for enjoyment;
- Students' literacy attitudes and practices, including their attitudes towards reading, the frequency with which they engage in reading for enjoyment, the frequency with which they read online (a national index), their perception of their competence in reading, and their perception of their reading difficulties;
- Students' endorsement of reading literacy strategies, including students' perceptions of the usefulness of various strategies for understanding and remembering texts, summarising texts, and assessing the credibility of sources of texts.

All of the student-level variables (including those relating to student attitudes/literacy practices and strategies) were also examined separately. Of the student demographic/educational background variables, only family/household wealth, and attendance at preschool were not statistically significant (Table 7.1, Column 3). All of the teacher-related variables were

32 The Student Questionnaire asked each student to indicate the level of education they expect to attain (see Chapter 4). Students who expected to attain Junior Cycle or below were coded as being at risk of early school leaving.

statistically significant, including teacher-directed instruction and teacher stimulation of reading engagement (as perceived by students). Just one of the parental engagement and support variables, current parental support for learning at home, was not statistically significant.

Following this, the two school-level variables were entered into a model together, and both retained statistical significance (Figure 7.1, Column 4).

A number of variables related to student-level socioeconomic status, including ESCS, parental education, parental occupation, home possessions and home educational resources were not significant when entered together with the other remaining independent variables (Table 7.1, Column 5). Indeed, cultural possessions and number of books in the home were the only aspects of socio-economic status that remained significant. As noted in Chapter 4, cultural possessions include classic literature, books of poetry, works of art and books on art, music or design, as well as music instruments. Socio-economic status may be represented by other variables in the model such as frequency of engagement in part-time work and frequency of absence from school.

It is notable that student gender was not statistically significant when entered into the model alongside other student-level variables, when there was a 19.2 score-point difference on overall reading literacy in favour of females in Ireland in 2018 (Chapter 2). However, gender was carried forward to the next step in building the model because of the possibility that it might interact significantly with one or more of the remaining variables.

Among the instructional support variables, teacher-directed instruction, teacher feedback and teacher stimulation of reading engagement were significant while teacher support in English lessons and teacher-adapted instruction were not (Table 7.1, Column 5).

Among the parental engagement and support variables that were entered together with the other Level 1 variables, just one, parental enjoyment of reading, was significant (Table 7.1, Column 5).

Following this, school-level ESCS, student gender, and the student variables that were statistically significant were all entered together in an interim model that excluded student literacy attitudes and practices, and students' endorsement of reading literacy strategies. Mean scores on continuous variables were grand-mean-centred to assist with interpretation, as all mean scores on the indices were scaled to zero. While the usual criterion of $p \leq .05$ was used in evaluating the significance of continuous variables, for categorical variables, a more stringent criterion ($p \leq .017$) was applied since, in all such cases, the scores of three groups were compared with a reference group.

Table 7.2 shows that the interim model explained 49.2% of between-school variance, and 25.8% of within-school variance, in reading achievement. School level ESCS was statistically significant. Surprisingly, when the level 1 and level 2 variables were combined to create the interim model, student gender was significant, with females expected to achieve a mean score that was 10.4 score points higher than male students.

Among the other student-level variables in the interim model, just a handful were not significant. In the case of grade level, the small increment in favour of Fifth year students, compared with those in Third year, was not significant. Similarly, the negative parameter associated with 1-2 days of absence from school in the two weeks prior to the PISA 2018

assessment was not significant, relative to the reference category (no absences).

Although student-level ESCS was not included in the interim model, a number of variables shown in Chapters 3 and 4 to be associated with ESCS were significant in the interim model. These included engagement in paid work and early school leaving risk. Students who reported working for more than 8 hours a week (less than 10%, according to Chapter 4) had an expected score that was 43.8 score points lower than students who did not engage in paid work. Students who were deemed to be at risk of leaving school early (i.e., before completing the Leaving Certificate exam) had an expected score that was some 61.1 score points lower than students not deemed to be at risk. The number of books in a student's home was also associated with reading performance, with, for example, those who had 11-20 books at home scoring some 32.5 points higher than those with 0-10 books at home.

Among the teacher-related variables, a one standard deviation increase on the teacher-directed instruction scale was associated with a decline of 9.5 score points on reading achievement (a relatively small effect). Similarly, a one standard deviation increase in the provision of feedback by teachers during English lessons was associated with a 3.6 point increase in performance (again a very small effect, even if statistically significant).

Table 7.1: Significance of variables considered for inclusion in model of computer-based reading literacy in PISA 2018

Variable (1)	Measurement info (2)	Significant alone (3)	Combined Level 2 Variables (4)	Combined Level 1 Variables (5)	Levels 1 and 2 Combined (Interim Model) (6)	Literacy and Strategies Variables Added (Final Model) (7)
School Level						
DEIS Status	(2) DEIS, non-DEIS	Y	Y		N	
ESCS (School)	Index	Y	Y		Y	Y
Student Level						
(Demographics/Educational Background)						
ESCS	Index	Y		N		
Home possessions	Index	Y		N		
Home educational resources	Index	Y		N		
Cultural possessions	Index	Y		Y	Y	N
Family wealth	Index	N				
Gender	(2) Male (R), Female	Y		N	Y	N
Immigrant/Language status	(3) Native (R), Immig. w/ English/ Irish, Immig. w/ other language	Y		N		
Parental occupation	HISEI Index	Y		N		
Parental education	(6) 3, 6, 9, 14.5, 16, 18 years	Y		N		
Books in the home	(4) 0-10 (R), 11-100, 101-500, More than 500	Y		Y	Y	Y
Part-time work	(4) Does not work (R), Up to 4 hours, 4-8 hours, more than 8 hours	Y		Y	Y	Y
Grade	(4) 1st/2nd year, 3rd year (R), Transition year, 5th year	Y		Y	Y	Y
Attended Preschool*	Yes (R), No	N				
Early school leaving risk**	(2) Yes (R), No	Y		Y	Y	N
Absence from school (in last two weeks)	(4) None, Absent 1-2 days, Absent 3-4 days, Absent 5 or more days	Y		Y	Y	N
(Instructional support)						
Teacher support in English lessons	Index	Y		N		
Teacher-directed instruction	Index	Y		Y	Y	N
Teacher-adapted instruction	Index	Y		N		
Teacher feedback	Index	Y		Y	N	

Table 7.1: Significance of variables considered for inclusion in model of computer-based reading literacy in PISA 2018 (contd.)

Variable (1)	Measurement info (2)	Significant alone (3)	Combined Level 2 Variables (4)	Combined Level 1 Variables (5)	Levels 1 and 2 Combined (Interim Model) (6)	Literacy and Strategies Variables Added (Final Model) (7)
Teacher stimulation of reading engagement	Index	Y		Y	Y	Y
(Parental Engagement and Support)						
Frequency of parents' reading for enjoyment	(4) Does not read (R); < 30 mins / day; 31-60 mins; 1 hour +	Y		N		
Parent's enjoyment of reading	Index	Y		Y	Y	Y
Current parental support for learning at home	Index	N				
Parent's emotional support	Index	Y		N		
Previous parental support for learning at home	Index	Y		N		
(Literacy attitudes and practices)						
Attitude to Reading /Enjoyment of Reading	Index	Y			Y	Y
Reading for Enjoyment (Frequency)	Does not read (R), < 30 mins / day, 30-60 mins; 1 hr +	Y			Y	Y
Online Reading (Frequency)	Index	Y				N
Perception of competence with reading	Index	y				Y
Perception of difficulty with reading	Index	y				Y
(Reading strategies)	Index					
Summarising Strategies	Index	Y				Y
Understanding and Remembering Strategies	Index	Y				Y
Assessing Credibility of Sources	Index	Y				Y

(R) – Reference Category for categorical variables.

* Based on a response to the Parent Questionnaire.

**Early school leaves are those who reported on the Student Questionnaire that they did not intend to go beyond the Junior Certificate examination.

Table 7.2: Interim model (before student-level literacy attitudes/practices and reading strategies clusters were added)

	Estimate	SE	Est./SE	Two-tailed P-value
Level 1 (Within Level)				
Gender (R = Male)	10.435	3.489	2.991	.003*
Books in the Home (R = 0-10)				
11-100	32.464	4.542	7.147	<.001*
101-500	62.486	5.590	11.178	<.001*
More than 500	64.869	8.336	7.782	<.001*
Paid work (R = 0 hours)				
Up to 4 hours	-23.552	4.157	-5.666	<.001*
4-8 hours	-27.861	6.395	-4.357	<.001*
More than 8 hours	-43.785	5.335	-8.208	<.001*
Grade Level (R -Third year)				
First/Second years	-48.358	15.272	-3.167	.002*
Transition year	22.235	3.340	6.657	<.001*
Fifth Year	3.731	5.819	0.641	.520
Early School Leaving Risk (R = Not at risk)	-61.062	10.443	-5.847	<.001*
Absence from School (R = none)				
1-2 days	-12.678	3.676	-3.448	.136
3-4 days	-40.026	8.179	-4.894	<.001*
5 or more days	-34.619	10.761	-3.217	.001*
Teacher-directed instruction	-9.486	1.818	-5.175	<.001*
Teacher feedback	3.617	1.667	2.170	.030*
Teacher stimulation of reading engagement	11.202	1.989	5.633	<.001*
Cultural possessions at home	3.515	1.627	2.161	.031*
Parents' enjoyment of reading	8.008	1.304	6.141	<.001*
Level 2 (Between School)				
ESCS (School mean)	36.607	5.392	6.789	<.001*
Intercept				
Reading performance	526.708	2.120	248.436	<.001*
R-Squared				
Within-schools	0.258			
Between-schools	0.492			

* p. is statistically significant, with Bonferroni adjustments for categorical variables.

The final model of reading achievement (Table 7.3) includes all of the significant variables in the interim model as well as variables in the student literacy attitudes and practices and endorsement of reading strategies clusters. Again, continuous independent variables were grand-mean-centred to assist with interpretation. In developing this model, a number of additional steps were undertaken, including the evaluation of interactions between student gender and other independent variables, and between student gender and school-level ESCS (a cross-level interaction). None of these interactions was statistically significant, and hence none is included in Table 7.3.

The final model explained 54.4% of the variance in performance between schools and 50.4% of the variance within schools. This represents an improvement over the interim model, particularly at the student level, where the respective percentages were 49.2% and 25.8%.

Before considering the effects of reading attitudes and practices and reading strategies variables, it is worth comparing the interim and final models where other variables are concerned. Again, school-level ESCS was statistically significant, with a reading score increment of 31.4 score points associated with a one-standard increase in school-level ESCS. This indicates that, all other things being equal, student reading performance increases by 31.4 points as the average ESCS value for their school increases by one standard deviation.

Student gender is not statistically significant in the final model, with females expected to score just 2.8 score points more than males when other variables are taken into account. This contrasts with the interim model where gender is significant. As in the interim model, the parameter estimate for a student in Fifth year is not statistically significant, relative to a student in Third year (the reference category), while a Transition-year student is expected to do better (by 19.4 score points) (again relative to a Third year). As in the interim model, there was a substantial negative parameter estimate (-36.1 score points) associated with being at risk of early school leaving. Again, the parameter estimate for a student who was absent from school for 1-2 days was not significant, relative to a student with no absences, but large negative increments were associated with higher (and much less frequent) levels of absence (25.0 for 3-4 days, and 26.2 for 5 or more days).

Both teacher-related variables in the interim model were also significant in the final model, though again effect sizes were small. The negative parameter for teacher-directed instruction (-6.8 score points per one unit increase in teacher-directed instruction) may indicate that weaker students in reading perceive themselves to be provided with more direct instruction from their teachers than their higher-performing counterparts.

As in the interim model, the parameter estimate associated with parental enjoyment of reading was significant, though small (an increase of 5.2 score points in reading was associated with an increase of one standard deviation on the parental enjoyment of reading scale).

Turning to student literacy attitudes and practices, a student's attitude towards reading is significantly associated with achievement, though the parameter is small (a one standard deviation increase in the attitude to reading scale is associated with a 3.8 score-point increase in reading performance). Students who read for up to 30 minutes per day have a score that is higher, by 13 score points, relative to students who do not read for enjoyment at all. However, while those who read for 31-60 minutes per day have an expected score that is 9.5 score points higher and those who read for more than an hour have a score that is higher by 13.5 score points, these were not significant.[33] The contribution of frequency of reading for enjoyment in the final model have been reduced by the inclusion of reading for enjoyment by parents in the model.

33 Bonferroni adjustments were made for testing significance of multi-category variables such as this one.

Table 7.3: Final model (after student-level literacy attitudes/practices and strategies clusters were added)

	Estimate	SE	Est./SE	Two-tailed P-value
Level 1 (Within School)				
Gender (R = Male)	2.759	2.989	0.923	.356
Books in the home (R = 0-10)**				
11-100	18.431	4.180	4.409	<.001*
101-500	32.584	4.541	7.176	<.001*
More than 500	27.533	6.957	3.958	<.001*
Paid work (R = 0 hours) **				
Up to 4 hours	-11.569	3.798	-3.046	.002*
4-8 hours	-15.589	5.038	-3.094	.002*
More than 8 hours	-19.597	5.046	-3.884	<.001*
Grade level (R -Third year) **				
First/Second years	-32.868	13.082	-2.512	.012*
Transition year	19.385	3.034	6.390	<.001*
Fifth year	5.368	4.680	1.147	.251
Early school leaving risk (R = Not at risk)	-36.143	9.403	-3.844	<.001*
Absence from School (R = none) **				
1-2 days	-3.140	3.196	-0.982	.326
3-4 days	-25.018	6.874	-3.640	<.001*
5 or more days	-26.223	11.045	-2.374	.018
Teacher-directed instruction	-6.762	1.518	-4.455	<.001*
Teacher stimulation of reading engagement	4.468	1.589	2.686	.007*
Parents' enjoyment of reading	5.151	1.126	4.575	<.001*
(Literacy attitudes and practices)				
Attitude to Reading	3.809	1.909	1.995	.046*
Reading for Enjoyment (Frequency) (R – Does not read) **				
Up to 30 mins (per day)	12.515	3.740	3.346	<.001*
31-60 mins	9.482	4.642	2.043	.041
More than an hour	13.489	5.855	2.304	.021
Perception of competence with reading	19.231	1.765	10.894	<.001*
Perception of difficulty with reading	-8.841	1.712	-5.163	<.001*
Reading Strategies				
Understanding and remembering	4.421	1.701	2.599	.009*
Summarising	10.663	1.544	6.908	<.001*
Assessing credibility of sources	20.078	1.405	14.288	<.001**
Level 1 (Between School)				
ESCS (School mean)	31.417	5.093	6.169	<.001*
Intercept				
Reading performance	529.946	1.758	301.410	<.001*
R-Squared				
Within-schools	0.504			
Between-schools	0.544			

* p. is statistically significant, with Bonferroni adjustments for categorical variables. ; **Deviance test – significant – Books in home: Chi-square = 142.85, df = 3, p. <.000; paid work: Chi-square = 5368.65, df = 3, p. < .000; grade level: Chi-square = 83.924, df = 3, p. < .000; Frequency of reading for enjoyment: Chi-square = 135.52, df = 3, p. < .000; Absence from school: Chi-square = 242.79; df = 3, p. < .000.

Students who perceive themselves to be more competent in reading are expected to perform better than students who perceive themselves to be less competent (all other things being equal), with an increment of 19.2 score points associated with a one standard deviation increase on the perception of confidence index. As might be expected, students who perceive themselves to struggle with reading do less well on PISA reading, with a decrease of 8.8 score points associated with a one-standard deviation increase on the perception of difficulty with reading index.

Finally, all three of the reading strategies indices are significantly and positively associated with reading performance, with a standard deviation increase on understanding and remembering associated with an increase of 4.4 score points on reading literacy, a standard deviation increase on summarising associated with an increase of 10.7 score points, and a standard deviation increase on assessing credibility of sources associated with an increment of 20.1 score points. The latter finding may not be surprising since evaluation is a key reading process in PISA, and a large proportion of reading literacy items are categorised as evaluative items (see Chapter 1).

7.3 COMPARISON WITH PISA 2009 MODELS OF PRINT AND DIGITAL READING

As part of the PISA 2009 national report, Perkins et al. (2012) presented separate multi-level models of print and digital reading. As noted in Chapter 1, all students in PISA 2009 completed a test of print-based reading, while a randomly-selected subset of students in each participating school completed a test of digital reading, with digital reading scores imputed for those who did not sit the latter test. In this section, some comparisons are drawn between these models and the final model of reading literacy for 2018 presented in this chapter.

First, the between-school variance in print reading for PISA 2009 was 26.7%, while it was estimated at 20.1% for digital reading in that year. For PISA 2018 reading literacy, it was reported to be 17.2%. However, care should be exercised in interpreting this as a decrease in between-school variance since 2009, since a number of schools in PISA 2009 (referred to as 'outlier' schools because their mean scores were 100 score points below the national average) unexpectedly underperformed on print-based reading literacy, compared with their performance in earlier PISA cycles (Perkins et al., 2012). If such schools performed atypically in 2009, they may have contributed to greater between-school variance in that year.

Two school level variables were significant in the 2009 model of print reading – school DEIS status and school outlier status (noted above), while none of the school-level variables was significant for digital reading in that year. In 2018, just one school-level variable was significant in the final model – school average ESCS.

The 2009 model of print reading included a number of significant student-level variables not in the 2018 final model, including immigrant/language status, number of siblings (not assessed in 2018), parental occupation, parental education, frequency of library usage (not assessed in PISA 2018) and frequency of online reading. In addition, there was a significant interaction between gender and number of books in the home, meaning that the effect of gender could not be considered independently of books (girls with higher numbers of books in the home

had a higher expected score compared with boys with higher numbers). Independent variables common to both the 2009 print model and the final 2018 reading model included engagement in paid work (called part-time work in 2009), grade level, attitude to reading, and frequency of reading for enjoyment. In 2009, endorsement of two reading strategies (understanding and remembering, and summarising) was significant in the final print model. In 2018, an additional strategy index, assessing credibility of sources, was included and, as noted above, was also significant.

The final model of print reading in PISA 2009 explained 80.5% of between-school variance in reading achievement, and 50.9% of within-school variance. The corresponding estimates for PISA 2018 reading were 50.4% and 54.4% respectively. Hence, there is a reduction in the proportion of between-school variance explained in 2018 and a small increase in the proportion of within-school variance.

The PISA 2009 model of digital reading was broadly similar to the paper-based model in 2009, although, as noted, no school-level variables were significant. Again, a number of variables not included in the final 2018 reading model were significant in the 2009 digital reading model, including immigrant/language status, parental occupation and parental education, frequency of online reading, and two variables on which data were not collected in 2018 – number of siblings, and frequency of library usage. As with print reading in 2009, there was a significant interaction between gender and number of books in the home – among those students with greater numbers of books, girls again outperformed boys.

A number of student-level variables were significant in both the 2009 print and digital reading models, and the 2018 reading model. These include engagement in paid work, grade level, frequency of reading for enjoyment (though the association between this variable and performance was more clear-cut in both 2009 models than in 2018), attitude to reading and early school-leaving risk. On the other hand, frequency of digital reading was significant in both 2009 models, but not in the 2018 model (perhaps because of the very strong influence of social media in the 2018 index).

The 2009 model of digital reading explained 57.3% of the variance in reading achievement between schools, and 45.8% within schools. As noted above, the respective estimates for 2018 were 50.4% and 54.4%. Hence, the 2018 reading model explained proportionately less between-school variance, and proportionately more within-school variance.

7.4 CONCLUSION

The 2018 model confirmed the importance of students' attitudes to and engagement in reading, and their endorsement of reading strategies in explaining additional variance in reading literacy performance. The proportion of within-school variance explained by the model doubled when clusters containing reading-related variables were added. The key implication of this is that, over and above socio-demographic variables, attitudes to and engagement with reading as well as awareness of reading strategies explain substantial amounts of variation in achievement. As in PISA 2009, this underlines the continuing importance of reading for enjoyment, bearing in mind that, in 2018, 47.7% of all students, and 56.1% of male students, reported that they did not read books for enjoyment at all (see Chapter 3).

It is noteworthy that the three reading strategy variables – students' endorsement of strategies for understanding and remembering, summarising, and assessing the credibility of sources – were all statistically significant, with the largest parameter estimate for assessing credibility – 20 score points, or under one fifth of a national standard deviation (90.7). This may be linked to the fact that evaluation of texts (which includes evaluation of sources) is a key element of the PISA 2018 reading literacy framework (see Chapter 1). It might be noted that PISA does not address the question of whether instruction in use of reading strategies might improve performance. The matter of strategy instruction is addressed in Chapter 8.

It is unclear why frequency of online reading was not significant in the final 2018 model, given that it was significant in both 2009 models, even though it contributed relatively little in explaining reading achievement in that year (estimates of 5.7 and 15.8 on print and digital reading per one standard deviation increase on the scale). It may be the case that the online reading variable in 2018, which was constructed at national level using questions developed by the OECD, was overly influenced by the frequency of online chat (according to Chapter 3 in this report, 85% of students in Ireland reported engaging in online chat on a daily basis, while just one in four read online news or information texts with similar frequency). It may be that an online reading measure that was less dependent on online chat could provide a clearer indication of the association between frequency of online reading and performance on digital reading.

The non-significance of gender in the final model may be surprising at first glance, given the relatively large and significant difference in favour of females on overall reading literacy (that is, the gender difference without accounting for any background or explanatory variables). The absence of a gender difference can be interpreted to mean that it is explained by gender differences in some of the explanatory variables in the model, such as gender differences in frequency of reading. There would be value in conducting follow-up analyses with the aim of identifying which individual variables or combination of variables give rise to the non-significance of gender.

It is also unclear why the 2018 interim and final models did not include individual-level variables associated with student socio-economic status such as parental occupation and parental education, which were significant in both 2009 models. It cannot be claimed that socio-economic status is no longer associated with reading performance – note the significant association between school-ESCS and performance in 2018 (Chapter 4) – though it does seem that some aspects of student ESCS may now manifest themselves in different ways. For example, engagement in paid work and absence from school are significant in the final model and are also associated with socio-economic status (see Chapter 4).

It may also be somewhat unexpected that just two teacher-related variables are significant in the final model for PISA 2018 – teacher-directed instruction and teacher stimulation of reading engagement, and that their contributions to explaining reading performance are fairly modest. Other teacher-related variables that might be expected to explain reading performance, such as teacher support in English lessons and teacher-adapted instruction, were not significant. It should be noted, however, that all of the teacher-related variables are based on student perceptions of the activities of teachers in English classes, and hence are not direct measures of teacher intervention. It is also worth bearing in mind that the PISA design is cross-sectional, rather than longitudinal, and in this instance, this means

that the model is testing a single point-in-time relationship between student-reported teacher activities and achievement. A longitudinal design would likely give rise to significant associations between teacher-related activities and student achievement.

It is also surprising that just one parent variable, frequency of parents reading for enjoyment, was significant in the final model, and that its association with achievement was modest (the parameter estimate was just 5.1 score points (per standard deviation increase on the index)). Moreover, while parent variables that might be expected to promote literacy, such as parents' emotional support and previous (early years) support for learning were significant when entered into the model on their own, they were no longer significant when entered alongside other student-level variables in the interim model. However, they only correlated very weakly with reading performance in the first instance and again, these findings should be interpreted with reference to the cross-sectional design of PISA. As noted in Chapter 4, the correlation between parents' emotional support and reading performance was 0.06, while that between parental previous support for learning at home and reading performance was just 0.08. One issue with the parental emotional support variable is that almost all parents (98% or more) agreed or strongly agreed that they supported their child's efforts and achievements at school, and that they encouraged their child to be confident. Hence, there was little variation in parents' responses, leading to a weak relationship with reading performance. There was also a tendency for large proportions of parents to endorse the statements relating to previous support for learning at home, with strong majorities (90% of parents or more) reporting that they read books to their child during early childhood, told stories and talked about things the child had done. The questions contributing to this index did not allow parents to indicate differences in how they implemented these activities. In any case, it is noteworthy that both frequency of parents' reading for enjoyment (an index), and frequency of students' reading for enjoyment (a categorical variable) were both significant in the final model.

Finally, it is noteworthy that number of books in the home continues to be significantly associated with reading performance, even though it can be assumed that most books in the home are paper-based, while PISA now assesses digital reading. In Chapter 4, it was noted that there was a linear increase in reading performance as number of books increased, with large increments between numbers of books. It is reasonable to infer that it is not number of books at home per se that has a positive association with achievement, but rather that books in the home are *indicative* of a home environment which may be more likely to foster and promote an interest in reading.

Chapter 8 – Conclusions and Recommendations

First, this chapter draws some broad conclusions about the reading literacy performance of students in Ireland on PISA 2018, and considers how performance has evolved across PISA cycles. Second, it reflects on school, student and parent variables that are significantly associated with performance on PISA reading literacy, drawing, in particular, on the outcomes of the final multi-level model of reading presented in Chapter 7. It also considers the impact of the National Literacy and Numeracy Strategy 2011-20 (DES, 2011, 2017) as it relates to PISA. The chapter concludes with a set of recommendations based on the findings.

8.1. PERFORMANCE ON PISA 2018 READING LITERACY AND TRENDS OVER TIME

Ireland's mean score on overall reading literacy in PISA 2018 was 518.1, with just three entities achieving significantly higher mean scores (Beijing-Shanghai-Jiangsu-Zhejiang (China), Singapore, and Macao (China)). While three OECD member countries ranked higher than Ireland (Estonia, Canada and Finland), none performed at a significantly higher level. This represents a strong improvement over PISA 2009, when reading literacy was a major assessment domain in PISA, and Ireland's mean score (495.6) was not significantly different from the OECD average. However, as noted in Chapter 1, Ireland's mean scores in 2012 (523.2) and 2015 (520.8) were also significantly above the corresponding OECD averages, and marginally higher than in 2018. In fact, 2009 can be considered an outlier year – the first and only PISA cycle in which Ireland was not among the highest-performing countries in reading literacy since PISA began in 2000.

It is unclear to what extent the transition to online reading in PISA has impacted on the reading literacy performance of students in Ireland, if at all. PISA 2018 marked the first cycle in which reading was a major assessment domain following the transition to computer-based assessment in 2015. As per the revised framework for reading, the 2018 assessment included a combination of older PISA items, originally administered on paper prior to 2015, alongside new items specially developed to assess aspects of digital reading, including items that assessed comprehension of multiple texts. Interestingly, despite issues around the PISA 2009 reading literacy assessment in Ireland (outlined in Chapter 1), average performance on 69 reading trend items administered in both 2009 and 2018 was slightly better in 2009, with respective percent correct scores of 61.9% and 61.0% (Chapter 2, Table 2.6). Average performance on a subset of 43 of these items was the same in both 2009 and 2018 (61.7%), but was marginally higher in both 2012 (65.3%) and 2015 (63.2%). On the other hand, the average performance of students in Ireland on 172 new items administered for the first time in 2018 was 65.0%, though this does not mean that students in Ireland did better on the 'new' items since, across the OECD, average percent correct on the new items was also higher compared with the trend ones. In any case, PISA is likely to drop most or all of the pre-2015 reading literacy items over time, and those items that are designed to

assess digital reading will become increasingly prominent, reflecting changes in 'real world' reading (even through some literary texts will continue to be included).

Although students in Ireland scored well above the corresponding OECD averages on all three reading process subscales in PISA 2018 (Locating Information, Understanding, and Reflecting and Evaluating), performance was stronger on Locating Information (520.7) and Evaluating and Reflecting (519.3) than on Understanding (510.2). Indeed, Ireland's performance on Understanding is below other higher-performing countries such as Singapore (548.1), Estonia (525.6) and Canada (519.6), which show more even distributions of performance across process subscales. It is not obvious why students in Ireland do relatively well on Evaluating and Reflecting, while doing less well on the more basic comprehension processes involved in Understanding. More detailed analyses of percent correct on subsets of reading items in Ireland compared with the OECD averages revealed further information about relative strengths and areas in need of development among Irish students. These suggested that the following are aspects of reading that require further development among Irish students: comprehension of literal meaning; interpreting conflict within or across texts; and assessing the quality and credibility of texts. Also, performance in Ireland was relatively weaker on items based on multiple-source (58.1% correct) than on single-source texts (67.8% correct), though students across the OECD had similarly stronger performance on Single compared with Multiple Source text items. There may be scope for improving overall performance by promoting greater attention to the skills underpinning Understanding, including representing literal information, integrating information and generating inferences.

The proportion of students in Ireland performing below Proficiency Level 2 on PISA 2018 reading literacy (11.8%) is considerably lower than in PISA 2009 (17.2%), indicating fewer lower-achieving students (as defined by PISA) in 2018. Furthermore, the proportion in 2018 compares favourably, both with the OECD average in 2018 (22.6%) and with other high-performing countries, with only Singapore (11.2%) and Estonia (11.1%) having marginally fewer lower achievers in 2018. Hence, while it would be preferable to have even fewer lower-achieving students in Ireland, the proportion is low compared to other countries in PISA 2018, although, as noted below, there is scope to reduce the proportion of boys performing below Level 2 which is almost twice the corresponding proportion of girls (15.1% vs 8.5% in 2018).

The proportion of higher-achieving students in Ireland – those performing at proficiency Levels 5-6 – was greater in 2018 (12.1%) than in 2009 (7.0%), indicating more higher-achieving students in 2018. In addition, the proportion of higher achievers in Ireland in 2018 is significantly above the corresponding OECD average (7.7%). However, the proportion in Ireland compares less favourably with other high-performing countries in PISA 2018, including Singapore (25.8%), Canada (15.0%), Finland (14.2%) and Estonia (13.9%). Hence, there is scope to increase the proportion of higher-achieving students in reading literacy.

Whereas in PISA 2009, female students achieved an overall mean score on reading literacy that was some 39.2 score points higher than males, by 2018 the gap in favour of females dropped to 23.2 score points. On average across OECD countries, the corresponding differences were 39.3 and 29.7 respectively, reflecting a smaller decline on average across OECD countries. In the case of Ireland, male students in 2018 achieved a mean score that was higher, by 30.1 score points, compared with male counterparts in 2009. Among females,

there was a corresponding increase of 14.1 score points. Hence, male students made a greater improvement between 2009 and 2018 compared with females, or, conversely, male students underperformed to a greater degree in 2009 than females. However, the transition to computer-based assessment in PISA should also be considered. It may be the case the some of the new texts in PISA 2018, including multiple-source texts, appeal to male students more than females, compared with more traditional single-source texts. In PISA 2015, when the reading literacy assessment comprised only texts transferred from paper, the gender difference in Ireland in favour of females was just 12.0 points, compared to an OECD average of 26.9 score points. Clearly, there is more to learn about gender differences in reading literacy, and how they relate in particular to digital presentations of texts and associated questions.

As noted above, the proportion of students in Ireland achieving below Level 2 on the overall reading scale in 2018 (11.8%) is low relative to other participating countries. However, the proportion of male students achieving below Level 2 in 2018 (15.1%) is relatively high, even though it represents a significant improvement since 2009 (23.1%), and is also well below the OECD average in 2018 (27.7%). In contrast, in 2018, just 8.5% of females performed below Level 2, down from 11.2% in 2009. The corresponding OECD average percentage moved in the opposite direction, with 17.5% of females performing below Level 2 in 2018, compared with 13.1% in 2009. It can be concluded that male students in Ireland, and on average across OECD countries, are more likely to underachieve on reading literacy, compared with females.

In 2018, twice as many male students in Ireland (10.3%) performed at or above Level 5, compared with 2009 (4.5%). There was also an increase in the proportion of higher-achieving female students, from 9.5% in 2009 to 13.8% in 2018. However, there have also been small increases in the proportions of male students on average across OECD countries performing at or above Level 5, from 5.0% in 2009 to 7.1% in 2018 (a significant increase), and of female students, from 9.7% to 10.5% (a non-significant increase).

The international report on PISA 2018 noted that total variation in reading performance in Ireland amounted to 84.3% of average total variation across OECD countries (OECD, 2019c), and that the proportion of variation in Ireland between schools (as a proportion of OECD average total variation) was 11.1%[34], with within-school variance at 73.1%. Only 3 entities in PISA 2018 (Iceland, Finland, and Baku (Azerbaijan)) had lower between-school variance compared with Ireland, indicating relatively small differences on reading achievement between schools in Ireland. An additional country, Denmark, had the same between-school variance as Ireland. Countries with greater between-school variance included Estonia (16.8%), Germany (53.8%) and the Netherlands (59.6%).

Looking at Ireland's overall performance on reading literacy in 2018, which is broadly similar to previous PISA cycles, with the exception of 2009, one might conclude that performance is stable and strong, and therefore there is relatively little need to change existing practices. It is worth noting that this relative stability has occurred in the context of the transition to computer-based assessment for reading literacy (and other PISA domains), and hence reflects well on the education system and on students. Going forward, it would seem important that students

34 The estimate of between-school variance in the null model of reading (Chapter 7) was higher, at 17.2%, as it was calculated with reference to students in Ireland only (whose data contributed to the multi-level models of reading).

continue to develop the skills required to engage successfully with digital texts (including, for example, understanding multiple-source texts, corroborating and handling conflict in texts, and assessing the quality and credibility of texts) and that they have regular opportunities to apply such skills in a range of contexts, including subjects and projects.

8.2. SCHOOL, STUDENT AND PARENT VARIABLES ASSOCIATED WITH READING PERFORMANCE

As noted in Chapters 3-4, a large number of the variables on which data were collected through the PISA context questionnaires in 2018 are significantly associated with student performance. The focus here is on variables that were statistically significant in the final model of reading performance, though there is a recognition that variables not in the final model may also be important from a policy perspective (for example, the performance of students who do not speak English or Irish at home).

8.2.1 School socio-economic status

At the school level, an association was observed between school-level average ESCS (economic, social and cultural status) and reading performance. In the final model of reading, there was a 31.4 score-point increase associated with a standard deviation increase in school-level ESCS, while controlling for student-level variables in the model. A related variable, school DEIS status, did not remain in the final model of reading, probably because of its strong association with school-level ESCS, and with other student-level variables.

8.2.2 Student demographic variables

At the student level, ESCS was significantly associated with reading performance when examined on its own, with a gap of 74.4 scores points in the average reading score of students in the top and bottom quartiles of the student ESCS scale. A number of variables that are components of ESCS also correlated significantly with reading, including parental occupation ($r = 0.27$), parental education ($r = 0.21$) and home possessions ($r = 0.25$). The latter variable comprised family wealth ($r = 0.05$), home educational resources ($r = 0.14$) and cultural possessions ($r = 0.24$). The number of books in a student's home, another element of home possessions, was also associated with reading achievement, with, for example, a score difference of over 100 score points in favour of those with 101-500 books, compared to those with 0-10 books. Of all these variables, only number of books in the home was statistically significant in the final model of reading performance. Even then, its association with reading performance was weaker than when examined alone. For example, the parameter estimate for students with 101-500 books was just 32.6 score points, compared with students with 0-10 books.

A number of variables that are associated with student-level ESCS, at least to some degree, are also associated with reading performance, including time spent in paid work, absence from school and risk of early school leaving. As noted in Chapter 4, any level of paid work is associated with lower performance on reading literacy, compared to engaging in less paid work, or not engaging in paid work at all. Of particular concern is the gap of 62.2 score points in favour of those not engaging in paid work (69.7% of students), compared with those

completing more than 8 hours per week (7.1%). In the final model of reading performance, the parameter estimate for students working more than 8 hours (compared to those engaging in no paid work) was 19.6 score points (about one fifth of a standard deviation) after school ESCS and various student variables had been controlled for.

In Chapter 4, stronger performance was reported in favour of students who missed no days of schooling in the two weeks leading up to the PISA 2018 assessment, compared with those absent for one or two days (17.4 score points lower), 3 or 4 days (49.1 score points lower), or 5 or more days (76.3 score points lower), though the proportions of students in the latter two groups were small (3.2% and 2.6% of students respectively). The final model confirmed the contribution of absence from school to reading performance, though only the parameter estimates for students who were absent for 3-4 days (-25.0) and five or more days (-26.2) were significantly different from the reference group (no absences).

Descriptive statistics showed that students deemed to be at risk of leaving school early (2.9% of students) achieved a mean score that was significantly lower (by 143 score points), compared with students who expected to complete a university degree. In the final model, early school leavers were expected to perform less well on average (by 36.1 score points) compared with students not deemed to be at risk (those expected to complete the Leaving Certificate or higher).

Year level was also associated with reading performance on PISA, with descriptive statistics showing that students in Third year (61.6%) performed significantly better than those in First/Second years (by 80.9 score points) and those in Fifth year (by 25.9 points), and less well than those in Transition year (by 17.6 Points). It was also noted that the proportion of students in Transition year increased from 24.0% in 2009 to 27.9% in 2018, while the proportion in Fifth year dropped from 14.4% to 8.5% between the two years. In the final multilevel model, year level was also significant, with students in Transition year performing better, by 19.4 score points, compared with Third years, and students in Fifth year also doing better than those in Third year, by a non-significant 5.4 score points. Hence, grade level continues to play a role in explaining reading performance, though its impact is weaker when controlling for other variables in the model.

One demographic variable not included in the final model was students' immigrant/language status. As noted in Chapter 4, the proportion of immigrant students speaking a language other than English/Irish at home more than doubled in size from 3.5% in 2009 to 8.8% in 2018. In 2018, students in this group achieved a mean score on reading that was 23.6 points lower than native students. Hence, students in this group, particularly those with low socio-economic status (see Chapter 4), are at risk of literacy difficulties.

8.2.3 Teacher-related variables

Several teacher-related variables (based on student responses to questionnaire items) were associated with reading performance, including teacher stimulation of reading, teacher support in English lessons, teacher-directed instruction (the extent to which teachers structure instruction in ways that promote learning), adaptation of instruction by teachers in English classes, extent of feedback from teachers in English classes and teachers' stimulation of reading. Just two of these remained in the final model of reading – teacher directed

instruction, which had a negative parameter (-6.7 score points associated with a standard deviation increase on the scale), suggesting that teachers may structure English classes to a greater extent for less-able readers, and teacher stimulation of reading engagement (a 4.5 score points increase associated with a standard deviation increase on the index).The latter includes such activities as encouraging students to express their opinions about a text, and showing them how information in texts builds on what they already know. Overall, the impact of the teacher-related variables is relatively small when other variables associated with reading performance are controlled for.

8.2.4 Parent variables

Several parent variables, such as parents' enjoyment of reading, parents' general support for learning, parents' emotional support for learning, parents' support for learning in early childhood (previous parental support for learning at home), and parents' involvement with their child's school were examined in Chapter 4. In general, these variables had weak associations with student performance, and only one, parents' enjoyment of reading, was significant in the final model of reading performance. This is notable to the extent that students' enjoyment of reading and the frequency with which they read for enjoyment were also significant in the final model. It may be that parents who enjoy reading share this enjoyment with their children, though it is unclear if this has a direct effect at age 15, or if the impact occurs earlier during children's learning. As noted in Chapter 4, this variable is also associated with students' socio-economic status (ESCS), with increased proportions of parents reporting that they enjoy reading, in line with higher ESCS.

8.2.5 Student engagement with and attitudes towards reading

Among the student literacy-related variables that were significant in the final model of reading were frequency for reading for enjoyment, and attitude to reading. As noted in Chapter 3, there has been a substantial and significant increase in the percentage of students in Ireland who do not read for enjoyment, from 41.9% (2009) to 47.7% in 2018. In 2018, 56.1% of boys and 39.4% of girls reported that they did not read for enjoyment at all. The inverses of these percentages (43.9% and 60.6%) are below the targets established in the Interim Review of the Literacy and Numeracy Strategy (at least 60% of boys and 70% of girls reading for enjoyment on a daily basis by 2020).

As discussed in Chapter 3, there is a clear association between socio-economic status (ESCS) and reading for enjoyment, with more students not reading for enjoyment in the lower ESCS quartiles and more reading for enjoyment in the higher ones. It is also clear that a small amount of daily reading for enjoyment (up to 30 minutes per day) is associated with higher performance on PISA, compared with no reading. This finding was reinforced in the final model of reading, where any level of reading for enjoyment was associated with an increment in performance, compared with not reading for enjoyment, when other school and student variables were taken into account.

There is evidence to suggest that reading for enjoyment declines between primary and post-primary schooling. In PIRLS 2016 (an international study of reading literacy of Fourth-grade students in which Ireland took part), just 13% of pupils in Fourth class in Ireland reported that they hardly ever or never read for fun outside of school (compared with 47.7% at age 15,

according to PISA 2018), 13% reported reading for fun once or twice a month, 31% once or twice a week, and 43% every day or almost every day (Delaney et al., in press; Mullis et al., 2017). Again, a clear association with achievement and frequency of reading for enjoyment can be observed, with, for example, a gap of 29 points on the PIRLS overall reading scale between non-readers and those reading once or twice a month, and larger gaps as students engaged in more reading.

PISA 2018 also draws attention again to the association between positive attitudes towards reading and reading performance. The PISA measure of attitudes was based on students' level of agreement with statements such as 'I only read if I have to' and 'I read only to get the information I need' (which were reverse-coded for analysis purposes). The mean score for students in Ireland on the resultant index was similar to the OECD average. In Ireland, there were large gaps in favour of female over male students, in favour of students with higher ESCS, compared to those with lower ESCS, and in favour of immigrant students over native students (see Chapter 3). Attitude to reading was significant in the final model of reading performance, though its association with reading was modest, with a five-point increment in reading associated with a one-standard deviation increase in attitude to reading. In PIRLS 2016, 41% of students in Ireland in Grade 4 were deemed to very much like reading, compared with an international average of 43% (Mullis et al., 2017).

Several researchers have pointed to the value of reading for enjoyment among adolescents. For example, Howard (2011), reporting on a Canadian study, pointed to the benefits of reading for enjoyment for academic performance (literacy and thinking skills), social engagement and personal development, with teen readers gaining significant insights into mature relationships, personal values, cultural identity, physical safety and security, aesthetic preferences, and understanding of the physical world. These, it was argued, help with the transition from childhood into adulthood. Wilkinson et al. (2020), drawing on interview data from 15- and 16-year olds in the UK, reported that adolescents who read print books for pleasure developed empathy skills and formed networks and friendships as they discussed their reading with others. Among the reasons for not engaging in such reading were a lack of time, a perception that reading was too effortful and was not encouraged, that it was expensive or was uncool, or that they had simply lost the habit or grown out of it. The authors concluded that there was a need for collaborative work among researchers, teachers, and engaged/disengaged readers to ensure that initiatives for promoting reading are optimal and reach and resonate with their intended audience. Quinn and Somers (2006) provided useful guidance on implementing reading for enjoyment programmes in school settings in Ireland.

The index of self-perceptions of reading ability, which was significant in the final model of reading (Chapter 7), comprises items such as 'I am a good reader', 'I can read fluently', and 'I can understand difficult texts'. In Ireland, 79.6% of students agreed with the latter statement, implying that 20% of students deem themselves to be poor readers. This is greater than the proportion performing below proficiency Level 2 in Ireland (11.8%). Given that there is a 19.2 points increment associated with a standard deviation increase in self-perceptions of reading ability when other variables are controlled for, it seems important to nurture students' reading self-concept, especially among at-risk readers, while also raising their achievement.

Another variable, perception of difficulty in reading, is negatively associated with reading performance. This variable is based on students' responses to statements such as 'I have

always had difficulty with reading' and 'I find it difficult to answer questions about a text'. In Ireland 18.4% indicated that they always had difficulty with reading, further supporting the view that about one in five students perceive themselves to be poor readers. In the final model of reading, a one standard deviation increase on the perception of difficulty with reading was associated with an increment of -8.8 score points on the PISA reading test. The research is unclear on whether students' reading self-concept increases as a result of improvement in reading performance, or whether it should be actively developed, alongside reading performance.

8.2.6 Students' reading strategies

One approach to assessing students' use of reading strategies is to set comprehension questions based on texts that the students have read and evaluate their responses. This approach does not tell us if the application of strategies by students was automatic (unconscious) or strategic (effortful). This is the main approach used by PISA, with students asked to respond to questions that are designed to assess processes such as Locating Information, Understanding, and Reflecting and Evaluating. In 2018, these questions were based on digital texts that students had read. As noted above, students in Ireland did relatively better on Locating Information and Reflecting and Evaluating, compared with Understanding (which includes integrating ideas and making inferences), though scope for improvement was also noted in respect of aspects of Reflecting and Evaluating, including items dealing with Corroborating and Handling Conflict and Assessing Quality and Credibility. A second approach, also used in PISA 2018, involves asking students about their use of reading comprehension strategies. As part of the student questionnaire, students were asked to indicate, on a six-point scale, the extent to which various strategies would be useful to them in understanding and remembering an informational text (Understanding and Remembering), summarising in writing a two-page text about changes to the water level of a lake in Africa (Summarising), and evaluating the source and authenticity of an email from a well-known mobile operator informing them that they had won a smartphone (Assessing Credibility of Sources). Only the third set of statements referred specifically to digital texts. Separate scales were constructed by the OECD for each of the three tasks, with each one set to an OECD average of 0.0 and a standard deviation of 1.0.

As noted in Chapter 3, students in Ireland achieved mean scores that were above the corresponding OECD averages on all three scales: 0.06 on Understanding and Remembering, 0.14 on Summarising and 0.21 on Assessing Credibility of Sources. In the final model of reading, there were statistically significant parameters associated with each scale, ranging from 4.4 score points (per standard deviation increase) on Understanding and Remembering, to 20.1 on Assessing Credibility of Sources.

It was noted in Chapter 3 that there were some significant differences in the percentages of students endorsing various reading strategies between 2009 and 2018 on items included in both years. For example, whereas in 2009, 62.6% of students reported that summarising a text in their own words was a very useful strategy for Understanding and Remembering, 49.3% did so in 2018. However, care should be exercised in interpreting this, given the unusual pattern of achievement in Ireland in PISA 2009. Furthermore, the questions on Understanding and Remembering and Summarising were interspersed throughout the

students' test booklets in 2009, whereas they were included as questionnaire items in 2018. Finally, students in 2018 had just completed a test of digital reading before answering the questions on reading strategies, while in 2009, they had been working through a paper-based reading test.

Of more concern are the discrepancies in endorsement of strategies indices observed between different subgroups in 2018 (see Chapter 3). For example, across all three indices, male students, students in the bottom ESCS quartile, and students in Fifth year did significantly less well than females, students in the top ESCS quartiles, and students in Third and Transition years. The student groups with the lowest average scores on the three indices are those who do least well on the overall reading literacy. Hence, the indices might be viewed as proxies for reading. However, the fact that they were significant in the final model, when other variables were controlled for, suggests that they should be taken into account when considering instructional programmes, alongside other important strategies (e.g., sequencing key ideas, identifying point of view, distinguishing between fact and opinion, classifying information as more and less important, identifying problems and solutions, corroborating and handling conflict).

PISA 2018 also asked students whether their English teachers asked them to implement specified strategies after reading and what strategies they used online. As these questions were not scaled in the way described above, they were not considered for inclusion in the model of reading described in Chapter 7. However, they do point to aspects of reading comprehension that seem to receive insufficient attention. For example, just one third of students reported that their teachers ask them to compare the content of a book or chapter after they have read it with their own experiences, while fewer than 60% reported that they were asked to discuss a book or chapter they had read in a small group with other students. A similar proportion was asked to write a text related to what they had read. On the other hand, almost all students reported that their teachers asked them questions about what they had read, while just under 90% reported that their teachers sought their personal views on what they had read, and a similar proportion said they were asked to write a summary.

Regarding online strategies, just 44.3% of students in Ireland reported that they had been taught how to use keywords when using a search engine, while 45.7% reported that they had been taught how to compare different web pages and decide which information is most relevant to their schoolwork. Despite the relatively high mean score of students in Ireland on the Assessing Credibility of Sources index described above, just 28.0% reported that they had been taught how to detect phishing or spam emails (Table 3.16). There would seem to be scope to further develop these skills, especially in light of the emphasis on them in the Junior Cycle Framework (DES, 2015) and the Junior Cycle English specification (NCCA, 2018). A key statement of learning in the former is for students to 'create, appreciate and critically interpret a wide range of texts' (p. 52), while a key aim of the latter is to support students 'to engage personally with and think critically about an increasingly broad range of spoken, written and multimodal texts' (p. 5).

The Junior Cycle English specification (p. 14) also lists a number of learning outcomes that are directly linked to key comprehension strategies, including:

- Use a wide range of reading comprehension strategies appropriate to texts, including digital texts
  - to retrieve information
  - to link to previous knowledge, follow a process or argument, summarise, link main ideas, and
  - to monitor their own understanding; to question, analyse, synthesise and evaluate
- Read their texts for understanding and appreciation of character, setting, story and action: to explore how and why characters develop, and to recognise the importance of setting and plot structure
- Read their texts to understand and appreciate language enrichment by examining an author's choice of words, the use and effect of simple figurative language, vocabulary and language patterns, and images, as appropriate to the text
- Identify, appreciate and compare the ways in which different literary, digital and visual genres and sub-genres shape texts and shape the reader's experience of them.

Taken together, these learning outcomes provide a basis for equipping all students with a broad range of text comprehension strategies, including strategies that support students in reflecting on their own understanding of texts (metacognitive knowledge). They can be extended by referring to sources such as Brun-Mercer (2019) that provide a comprehensive overview of strategies for comprehension of online texts including identifying the topic and search terms, determining credibility of texts, and consolidating information and keeping track of sources. Others (e.g., Dobler & Eagleton, 2015; Harris, 2015) provide specific suggestions for teaching web-based reading strategies.

8.2.7 Target setting and PISA

A key element of the National Literacy and Numeracy Strategy involved setting targets designed to improve reading literacy across the education system. While the original (2011) target for students at Level 4 and above (an increase of 5%) had been achieved by 2012, when 37.4% performed at or above Level 4, compared with 28.9% in 2009, the target of reducing the proportion performing below Level 2 had not (see Table 5.1 in Chapter 5). In 2009, 17.2% performed below Level 2 in 2009, and the proportion doing so in 2012 was 9.8%. The situation was broadly similar by PISA 2015, when 37.1% achieved Level 4 or higher (still 5% higher than in 2009), and 10.2% achieved below Level 2.

New targets based on PISA were issued in the Interim Strategy Review in 2017[35], with a target of 40% achieving Level 4 or above, and less than 8.5% achieving below Level 2 by 2020. Neither of these targets was achieved in 2018 (36.2% and 11.8% respectively). An additional target relating to higher achievers, set in 2017, referred to 12% performing at

35 There have been other iterations of PISA targets in the policy literature. For example, the Action Plan for Education 2016-19 (DES, 2016) set out slightly different targets to those set out in the Interim Strategy Review.

Levels 5-6 by 2020. This target was achieved by 2018, when 12.1% performed at these levels, compared with 10.7% in 2015.

As noted above, efforts to achieve the current target for low achievers represent a particular challenge as the proportion of students performing below Level 2 in Ireland was among the lowest in PISA 2018, though more progress could be made in reducing the proportion of lower-achieving boys (currently at 15.7%). On the other hand, there is scope to increase the proportion of higher achievers, with several countries having higher proportions at Levels 5-6 in 2018, compared with Ireland, including Singapore (25.8%), Canada (15.0%), Finland (14.2%) and Estonia (13.9%).

For the first time, the Interim Strategy Review also specified targets to be achieved by students in DEIS schools by 2020. A target of 26%[36] was set out for Level 4 and above. However, in PISA 2018, 21.2% performed at Level 4 or higher, compared with about the same proportion in 2015 (21.4%). The Interim Review also set a target of 18% for at or below Level 1. However, the proportions in DEIS schools performing at Level 1 or below were the same in both 2015 and 2018 – 21.8% in both cases. Finally, the Interim Review set a target of 8% for Levels 5-6. In 2018, 5.5% performed at these levels, compared with 4.7% in 2015.

In reviewing the appropriateness of establishing targets based on PISA in the future, it might be noted that PISA now assesses reading literacy on computer (i.e., digital reading), and, in doing so, taps into a set of reading skills that are less relevant for the paper-based examinations that students in post-primary schools complete at Junior and Leaving Certificate levels at this time. Another challenge concerns the fact that individual schools do not know what proportions of their 15-year olds perform at different proficiency levels on PISA, and hence they cannot assess their own progress against the targets. This suggests that a measure benchmarked against PISA, such as a standardised test that taps into the same broad set of skills and processes that PISA assesses, might be used by individual schools to monitor their progress. Indeed, the National Literacy and Numeracy Strategy suggested that standardised tests of English and mathematics would be administered to students in Second year (in a manner similar to what is currently done at primary level), but this proposal was never formally implemented.

Gilleece et al. (2020) also noted a number of issues around the use of targets based on PISA for monitoring standards in DEIS schools. Their proposals also include the use of nationally-standardised tests to monitor performance at school level, and the establishment of relative targets at national level (as an example, they suggest cutting the ratio of students performing below Level 2 in non-DEIS and DEIS schools from the current level of 2.4 to 2.0).

A further issue with current targets, such as those in the Literacy and Numeracy Strategy, is that they do not take measurement and sampling error into account. Instead of referring to a specific target (such as 18% of students in DEIS schools reading at or below Level 1), it might be preferable to specify a range of percentages that includes the target (for example, between 16% and 20% reading at or below Level 1). Although less clear than an absolute percentage, this would convey the view that percentages generated by PISA are estimates, around which confidence intervals can be built to take measurement and sampling error into account.

36 The DEIS targets in the Interim Review were adjusted by Gilleece et al. (2020) to reflect an incorrect allocation of schools to DEIS when the original targets were set. The figures in the Interim Report were set out before the error had been identified.

8.2.8 Other policy initiatives to improve reading literacy

As noted in Chapter 5, school principals and teachers reported on the implementation of various initiatives (many of them outlined in the Literacy and Numeracy Strategy) designed to enhance literacy at school level, including initiatives designed to improve reading literacy in various subject areas. For example, upwards of 90% of students were in schools in which school principals reported that self-evaluation was undertaken in relation to the literacy (and numeracy) achievements of students, 96.0% were in schools in which English literacy is assessed at the start of Junior Cycle, and 94% attended schools that reported having a clear plan on how to support students with additional learning needs to achieve their potential in literacy. On the other hand, just 81.4% were in schools that had a plan on improving the use of assessment and evaluation to support better learning in literacy, suggesting that further support may need to be provided in this area.

It is also clear that many post-primary schools have the infrastructure in place to further support the development of literacy and numeracy across subject areas, with 73.4% of students attending a school in which there is a literacy co-ordinator (83.8% of students in DEIS schools, and 70.1% in non-DEIS schools). Large proportions of students also attended schools within which there is a group of teachers appointed to co-ordinate and support literacy development. Interestingly, in their open comments on the Strategy, more principals referred to the literacy team as a positive element in improving literacy (17.4%) compared with the literacy co-ordinator (5.0%).

Principal teachers were also confident that teachers in their schools in subjects other than English had the relevant skills to help students develop and improve students' literacy skills, with 96.5% of students in schools where the principal teacher agreed or strongly agreed with this. Two areas of relative weakness were identified. Just 71.1% of students were in schools that took the national targets in the Literacy and Numeracy Strategy into account when deciding on school-level targets (perhaps confirming the relative distance of PISA targets from ongoing teaching, learning and assessment in schools) and 64.4% of pupils were in schools where teachers worked with parents and the wider community to support students' literacy. These are areas that might be examined further to see if there is scope for development. While it is clear from the responses provided by school principals that some attention in given to teaching literacy across subject areas, it is unclear how extensive this is and what impact it has had on performance.

In their open comments on factors hindering the improvement of literacy in their schools, 40.1% of principals mentioned lack of time, while just 7.6% referred to lack of resources. Other negative factors included initiative overload (18.5%), students' over-engagement with social media technology (8.9%), a focus on Junior Cycle (arising from recent changes, including those relating to assessment) (8.3%) and lack of support from parents (7.0%). These issues need to be taken into account in considering how best to promote literacy across the curriculum in the future (see below). It is clear that literacy standards continue to be a matter of concern to schools, with over one quarter of students (31.0%) in schools where the principal is 'greatly concerned' or 'moderately concerned' about students' ability to access the curriculum due to low literacy skills (55.5% in DEIS schools, compared with 23.3% in non-DEIS schools).

Teachers of English who completed the national teacher questionnaire as part of PISA 2018 were also asked about aspects of the Literacy and Numeracy Strategy. For example, 39.5% of teachers reported that they had completed some CPD in the previous two years on teaching English throughout the curriculum, while 39.9% reported that they had attended literacy link courses and cluster meetings. English teachers were generally confident in their understanding of literacy development, with 24.0% 'strongly agreeing' and 66.9% 'agreeing' that they understand how students develop basic literacy skills, and similar percentages indicating these levels of agreement for understanding the development of advanced literacy skills (26.7% and 62.1% respectively). However, while almost all English teachers (97.4%) reported that they had the skills to address the literacy needs of the majority of students in their classes, just 71.8% reported that they had the skills to address the literacy needs of students with special education needs. This is an area that might be examined further, taking into account support that may be provided by special needs teachers as well.

Teachers of English also provided their views on the teaching of literacy across the curriculum in their schools. Almost 85% of teachers (84.4%) 'strongly agreed' or 'agreed' that there is a culture of sharing best practice on how to improve students' literacy at school level, while 77.4% expressed similar levels of agreement with the view that teaching staff in the school as a whole took an active and integrated approach to addressing the literacy needs of students. These proportions are high, again suggesting that a good structure has been established in schools on which to build further work on literacy development.

Whereas over three -quarters of English teachers reported familiarity with the original Literacy and Numeracy Strategy, just 39.8% had read the Interim Review. This is consistent with a view that the Strategy may have faded from prominence to some extent as other competing initiatives such as the new assessments for Junior Cycle English came to the fore. Over half of teachers (54%) reported that they had often supported other teachers in their school to teach literacy skills in their subjects, and 38.9% had participated in professional development that enabled them to support teachers of other subjects to teach literacy skills. Hence, there is scope for further involvement of English teachers in literacy-related initiatives at school level. Just 63.7% of English teachers reported that subject teachers in their school are generally aware of the implications of the National Strategy for their work in the area of literacy, while just 53.7% of English teachers reported that they had the skills required to teach digital literacy in English.

When asked about the areas of English in which students struggled with the most, 18.3% of teachers reported that at least one in five Third year students struggled with reading literacy. The corresponding proportions were greater for writing (26.6%) and listening (20.1%), while 14.4% of teachers indicated that at least one in five students had difficulties with aspects of speaking. In the case of DEIS schools, almost 40% of English teachers reported that 20% or more of Third-year students struggled with writing. These data suggest that supports provided to students across subject areas need to embrace writing as well as other aspects of communication.

8.2.9 Teaching English at Junior Cycle

In addition to obtaining teachers' views on implementation of the Literacy and Numeracy Strategy in their schools, the PISA 2018 national English Teacher Questionnaire gathered

teachers' perceptions of the Junior Cycle English specification introduced in 2014, for first examination in 2017. In general, teachers were positive about the specification, with large proportions agreeing or strongly agreeing that they take an integrated approach to teaching oral language, reading and writing in their Junior Cycle classes (97.5%), that discussion and debate often occur in their Junior Cycle classes (96.7%), and that it is helpful that some outcomes in the curriculum specification are highlighted for First years (90.0%). There was less agreement with the view that there is continuity between the primary English language curriculum and the curriculum for First-year students (67.6%), and that teachers teach a range of digital literacy skills to their Junior Cycle students (47.9%). The lack of continuity may reflect, at least in part, the fact that the new Primary Language Curriculum was not rolled out in senior primary classes until 2019 (i.e., after PISA 2018 questionnaires had been administered). Nearly three quarters of teachers (72.5%) agreed or strongly agreed that engaging students individually or in pairs with content on digital devices enhances learning. Hence, continuity between the primary and post-primary curricula for English and the teaching of digital literacy skills can be identified as areas that may need to be developed further.

When teachers were asked to compare the impact of the 2014 specification to its predecessor, at least three in four agreed or strongly agreed that there has been an improvement in students' oral language skills (83.3%), that students received more formative feedback during lessons (77.7%), that students read and wrote a broader range of texts and genres (71.9%), that students read and created more multi-modal texts during English classes (70.4%), and that students engaged more often in working with groups (81.6%). Aspects that did not improve to the same extent according to teachers were students' management of their own learning (44.0%), levels of motivation during English class (40.9%), grammar and spelling (19.8%), and parents' understanding of the requirements of the specification and associated assessments (13.9%). There were also relatively low levels of agreement on whether high-ability students are stretched to a greater extent than before (44.0%), and whether students for whom English is an additional language are learning more in English classes (40.9%). It is noteworthy that there is a perception among teachers that parents do not understand the requirements of the specification and associated assessments – it was noted earlier that a relatively low percentage of students were in schools in which principal teachers agreed that teachers work with parents and the wider community to support children's literacy.

Large majorities of English teachers agreed or strongly agreed that they develop and administer tests that are their own or are developed in collaboration with other teachers in their school (95.5%), that they work with other teachers of English in their schools to improve the assessment of English at Junior Cycle (93.6%), and that SLAR meetings helped their own understanding of assessment (78.7%). However, fewer teachers indicated similar levels of agreement with the view that the Junior Cycle curriculum and assessments challenge the most-able students in their English classes (64.3%), that they use the results of standardised tests of reading to plan their teaching (50.0%) or that digital assessments contribute to planning and teaching of their Junior Cycle English classes (28.4%). Hence, while some aspects of assessment, including collaboration among teachers, seem to work quite well, other aspects, including use of standardised test results for planning and teaching, and the use of digital assessments in English classes, may require further development.

8.3 RECOMMENDATIONS

8.3.1 Overall reading literacy

There is evidence of strong and stable reading literacy performance on PISA since 2012, as well as specific findings that should be considered in order to further improve reading literacy standards.

Specific strategies that are recommended are:

- focusing more strongly on students' comprehension of digital texts, and, in particular, their ability to engage in such processes as Integrating Information and Generating Inferences; attention might also be paid to such skills as Corroborating and Handling Conflict, and Assessing the Quality and Credibility of texts.
- placing a stronger focus on students' understanding of multiple-source texts in teaching, learning and assessment
- encouraging more students at all ability levels to engage more frequently in reading a range of text types for enjoyment.

8.3.2 Gender differences in reading literacy

Although the overall gender gap in reading literacy achievement has narrowed in recent PISA cycles, attention should be focused on policies and supports that are appropriately targeted at lower-achieving boys.

The gap in favour of females in Ireland in 2018 (23.2 score points) was among the lowest across participating countries, though it was substantially higher than in 2015 (12.0). One group that continues to merit close attention is lower-achieving male students, as 15.1% of male students performed below Proficiency Level 2 in 2018 in Ireland, compared with 8.5% of females. The actual proportion of male students who perceive themselves to be poor readers is likely to be greater than this, with, for example, 22.3% of male students in Ireland in PISA 2018 indicating that they are not good readers, compared with 18.5% of females.

8.3.3 English language learners

Targeted supports should continue be provided to immigrant students who are acquiring English language skills, taking into account their socio-economic and home environment contexts.

The proportion of students who speak a language other than English or Irish at home has increased from 3.5% of students in PISA 2009 to 8.8% in 2018. Although immigrant/language status was not included in the final model of reading (its effect was explained by other variables in the model), immigrants who spoke a language other than English or Irish at home had a mean reading score that was significantly lower than that of native students, by a quarter of a standard deviation, and their average ESCS was also significantly lower than that of native students.

8.3.4 Engagement in reading and enjoyment of reading

A sustained, focused strategy to foster and promote enjoyment of reading and attitudes to reading, starting young, and appropriate to the evolving nature of reading, is needed.

Clearly, the nature of reading is evolving with the transition to digital texts and online reading, and the heavy immersion of students in social media. Hence, it seems inevitable that variables such as the frequency with which students read books for enjoyment, and their interest in reading, will change. Nevertheless, as the final model of reading literacy showed, these variables continue to be important in explaining reading performance, even after accounting for other relevant variables. Enjoyment of reading and attitudes to reading are also associated with reading achievement at primary level. Given the benefits of reading for enjoyment (see above), and the fact that reading for pleasure is a key learning outcome in the Junior Cycle English specification, it is a matter of concern that almost one-half of 15-year-olds do not read for enjoyment at all. All students should be expected to read paper- and digital texts, both for enjoyment and to locate and use information. Students should be encouraged to read longer, more extended texts for enjoyment, as well as shorter texts, and multiple texts, for information. The model of reading indicates that teachers can support students to engage in reading, and that parents can continue to model reading as part of this process. Research suggests that there is value in discussing students' reading practices with them, and seeking to understand and support the reading preferences of both boys and girls and the types of texts they enjoy reading.

8.3.5 Reading skills and strategies

The development of teaching and learning approaches for effective reading strategies is recommended, using the learning outcomes in the Junior Cycle English specification as a basis, building in cross-curricular strategies, and tailoring instruction to various ability levels.

A clear finding from the multi-level model of reading is the relatively strong association between students' endorsement of effective reading strategies for Understanding and Remembering, Summarising texts and Assessing the Credibility of Sources, and their reading performance. Overall performance on PISA, and the skillsets of individual students, could be further enhanced by supporting them in applying such skills to paper- and digital texts, including multiple-source online texts (Cho, Afflerbach & Hahn, 2018; Coiro, 2020). Moreover, there may be value in teaching such skills to students of all ability levels, including struggling readers (Kanniainen et al., 2019).

The learning outcomes in the Junior Cycle English specification provide a clear menu of skills and strategies that can be taught to students across different text types and formats. In some instances, it will be sufficient to frame post-reading questions with reference to specific learning outcomes such as retrieving information, linking to previous knowledge, following a process or argument, summarising, linking main ideas, or monitoring students' own understanding of the text; in other cases it will be necessary to provide scaffolded instruction to students to support their understanding and application of strategies, using, for example, a gradual release of responsibility framework (see Fisher & Frey, 2013). Guided release of responsibility involves the teacher modelling the target skill, providing guided practice, engaging students in collaborative learning, and providing opportunities

for independent practice. Students move in and out of these phases, based on the levels of support that they need.

In addition to supporting students to acquire and apply strategies in English classes, it will be necessary to ensure that they apply them across the curriculum, including across languages. Hence, there is scope for school staff to continue to collaborate on the teaching of comprehension strategies (and other literacy-related activities) across subject areas. It would be important to ensure that students are supported in developing their comprehension of information texts in print and digital forms across subject areas, since such texts are used less widely in English classes, compared with literary texts.

8.3.6 Target setting and PISA

The way in which PISA is used to set national literacy (and numeracy) targets should be revisited. Relative rather than absolute targets may be more appropriate in some contexts. Different but coherent targets at system and school levels may be required. The lack of national standardised assessment data at post-primary level needs to be addressed. Targets which are not based on test scores (e.g. frequency of reading different digital texts) should continue to feature. The focus of target setting in reading literacy should be on the lower end of the achievement distribution, including, in particular, lower-achieving boys.

While PISA may continue to provide broad targets for the improvement of reading literacy (and other domains), it is clear that individual schools and teachers may not be aware of how the targets affect them, and how they can contribute to the achievement of national targets. The availability of standardised test data, that includes information on students' strengths and weaknesses on different aspects of literacy, would help schools to establish their own targets and to monitor achievement of those targets.

When targets are established in a policy context, there may be value in specifying them in terms of percentage bands (for example, between 9 and 12% of students will achieve Level X) rather than as discrete percentages, so that measurement error around percentages can be taken into account (see Gilleece *et al., 2020)*.

In discussing the appropriateness of current targets for students in DEIS schools, which are presented in absolute terms (e.g., a reduction in the proportion of lower-achieving students from X% to Y%), Gilleece et al. (2020) suggested considering targets in relative terms as well, as this would allow a consideration of the gap between students in DEIS and non-DEIS schools. They noted that, as of 2018, 2.4 times as many students in DEIS than in non-DEIS schools scored below Level 2 on PISA reading literacy, and that a new relative target could specify a reduction in this ratio (for example, to 2.0).

Consideration should be given to broadening the range of indicators of low achievement in reading beyond those based solely on test performance. In PISA 2018, 79.6% of students perceived themselves to be good readers, and this proportion could be increased with targeted interventions and supports. Similarly, efforts could he made to reduce the proportion (18.5% in PISA 2018) that perceive themselves to have difficulty with reading, as well as the proportion that find it difficult to answer questions about a text (25.0% in 2018).

Targets could also be established in relation to students' engagement in digital reading, with a view to involving students more frequently in such activities as searching for information

online to learn about a topic (25.0% currently do this several times a day) and searching for practical information online (14.8%), in both schoolwork and homework contexts. Revised targets for reading for enjoyment could also be considered, alongside support to schools to achieve such targets.

In considering how to meet the needs of lower-achieving students, it might be noted that they are likely to represent a range of contexts (for examples, students who work 8 hours a week for pay, students with low levels of engagement in reading and low self-efficacy as readers, and students from homes where literacy may not be a priority or there are few books available). Often, these contexts may overlap in complex ways. Hence, efforts to support such students need to be broad-based. In addition to focusing on developing skills and strategies, they need to emphasise the enhancement of students' reading motivation and their confidence in themselves as readers.

8.3.7 Supporting literacy development across the curriculum

Any new strategy development should include a focus on literacy across the curriculum and coherent linkages between and among digital and non-digital elements; attention should continue to be allocated to co-ordinated whole-school strategies for improving literacy skills, including establishment of a literacy team, having a school action plan for literacy, and conducting a school-level self-evaluation of literacy skills.

Many post-primary schools have the infrastructure in place to further support the development of literacy and numeracy across subject areas, with literacy co-ordinators and committees responsible for literacy across the curriculum in place in schools attended by large majorities of students. Furthermore, there is evidence from English teachers that there is a culture of sharing best practice among teachers on how to improve students' literacy, with such teachers taking an active and integrated approach at school level to addressing the literacy needs of students. This infrastructure can be used to ensure that due attention continues to be paid to the development of literacy across the curriculum (sometimes referred to as 'disciplinary literacy', Shanahan & Shanahan, 2020), in line with the status of literacy as a key skill in the Junior Cycle framework. Among the activities that could be undertaken to support this are the ongoing upskilling of English teachers and literacy co-ordinators. This could enable them to better support subject teachers to address students' literacy difficulties through activities such as joint planning of interventions in reading literacy, digital literacy and writing, team teaching, and supporting students with special education needs as they draw on literacy skills in subject classes. Strategies for further involving parents in their children's literacy learning should also be promoted.

The data provided by school principals supports key tenets of school self-evaluation, including staff ownership and schoolwide approaches. It seems important to continue to emphasise these in promoting literacy across the curriculum.

8.3.8 Teaching English at Junior Cycle

Enhancements to the teaching and learning of English at Junior Cycle should include an emphasis on student motivation, management of learning skills, grammar and spelling, parents' understanding of curriculum and assessment in English, and teachers' use of

assessment data and of digital assessment. Specific aspects of assessment, including use of standardised test results for planning and particularly the use of digital assessments in English classes, should be a focus of further guidance and development.

Responses to the PISA 2018 national Teacher Questionnaire suggest that, from the perspective of English teachers, the Junior Cycle English specification is working well, with large proportions of teachers integrating oral language, reading and writing during teaching and learning, engaging students in discussion and debate during lessons, and providing formative feedback to students to guide their learning. However, there is scope for development in such areas as students' motivation, their management of their learning skills, their grammar and spelling, and their parents' understanding of curriculum and assessment in English. There would also be value in building on teachers' current assessment practices by extending access to students' standardised test results in the context of planning for teaching and learning, and supporting broader use of digital assessment, such as the use of e-portfolios for assessing reading and writing.

References

Baker, L., Scher, D., & Mackler, K. (1997). Home and family influences on motivations for reading. *Educational Psychologist*, 32, pp. 69-82. doi.org/10.1207/s15326985ep3202_2.

Brun-Mercer, N. (2019). Online reading strategies for the classroom. *English Teaching Forum, 57*(4), 2-11. Accessed at: https://at.usembassy.gov/wp-content/uploads/sites/39/ETF_57_4_2019.pdf.

Cho, B.-Y., Afflerbach, P., & Han, H. (2018). Strategic processing in accessing, comprehending, and using multiple sources online. In J. Braasch, I. Bråten, & M. McCrudden (Eds.), *Handbook of multiple source use* (pp.133–150). Routledge.

Cohen, J., Michelli, N.M., & Pickeral, N.M. (2009), "School climate: Research, policy, practice, and teacher education", *Teachers College Record*, *111* (1), 180-213. DOI: 10.1177/016146810911100108.

Coiro, J., & Dobler, E. (2007). Exploring the online reading comprehension strategies used by sixth-grade skilled readers to search for and locate information on the Internet. *Reading Research Quarterly, 42*(2), 214–257. https://doi.org/10.1598/rrq.42.2.2.

Coiro, J. (2020). Toward a multifaceted heuristic of digital reading to inform assessment, research, practice, and policy. *Reading Research Quarterly*, *23*(2), 1-23. http://doi.org/10.1002/rrq.302.

Cosgrove, J. (2011). *Does student engagement explain performance on PISA? Comparisons of response patterns on the PISA tests across time.* Dublin: Educational Research Centre.

Cosgrove, J., & Cartwright, F. (2014). Changes in achievement on PISA: The case of Ireland and implications for international assessment practice. *Large-Scale Assessments in Education*, *2*, 2. http://www.largescaleassessmentsineducation.com/content/2/1/2.

Cosgrove, J., Moran, E., Feerick, E., & Duggan, A. (2019). *Digital Learning Framework (DLF) national evaluation: Starting off – Baseline report.* Dublin: Educational Research Centre.

Delaney, E., McAteer, S. & McHugh, G. (In press). *Primary school reading in Ireland in PIRLS 2016: Perspectives of pupils, parents and teachers.* Dublin: Author.

DES/NEPS (Department of Education and Skills/National Educational Psychological Service). (n.d.). *A continuum of support for post-primary schools. Guidelines for teachers*. Dublin: DES. Accessed at: https://assets.gov.ie/40653/cc3a4af942a24fe0870cc8d79d92dbf2.pdf.

DES. (Department of Education and Skills). (2011). *Literacy and Numeracy for Learning and Life: The National Strategy to Improve Literacy and Numeracy among Children and Young People*. Dublin: Author.

DES. (2012a). *Framework for Junior Cycle.* Dublin: Author.

DES. (2012b). *School self-evaluation guidelines for post-primary schools.* Dublin: Author.

DES. (2015). *Framework for Junior Cycle.* Dublin: Author.

DES. (2016a). *School self-evaluation Guidelines 2016-2020: Post-primary.* Dublin: Author.

DES. (2016b). *Action plan for education 2016-2019.* Dublin: Author.

DES. (2017a). *Literacy and numeracy for learning and life 2011-2020: Interim review 2011-2016; New targets 2017-2020.* Dublin: Author.

DES. (2017b). *Digital learning framework for post-primary schools.* Dublin: Author.

DES. (2017c). *DEIS plan 2017. Delivering equality of opportunity in schools.* Dublin: Author.

DES. (2017d). *Action plan for education 2017*. Dublin: Author.

Dobler, E., & Eagleton, M. B. (2015). *Reading the web: Strategies for internet inquiry*. (2nd ed.). Guilford Publications.

Fisher, D., & Frey, N. (2013). *Better learning through structured teaching: A framework for the gradual release of responsibility* (2nd ed.). Alexandria, VA: Association for Supervision and Curriculum Development.

Ganzeboom, H. (2010). A new international socio-economic index (ISEI) of occupational status for the international standard classification of occupation 2008 (ISCO-08) constructed with data from the ISSP 2002-2007, http://www.harryganzeboom.nl/pdf/2010-ganzeboomisei08-issp-lisbon-(paper).pdf.

Gilleece, L., Nelis, S.M., Fitzgerald, C., & Cosgrove, J. (2020). *Reading, maths and science achievement in DEIS schools: Evidence from PISA 2018.* Dublin: Educational Research Centre.

Grolnick, W. and M. Slowiaczek (1994). Parents' involvement in children's schooling: A multidimensional conceptualization and motivational model. *Child Development*, *65*(1), pp. 237-252, http://dx.doi.org/10.1111/j.1467-8624.1994.tb00747.x.

Harris, K. (2015). Integrating digital literacy into English language instruction: Issue brief. *Literacy Information and Communication System*, 1–9. https://lincs.ed.gov/sites/default/files/ELL_Digital_Literacy_508.pdf.

Howard, V. (2011). The importance of pleasure reading in the lives of young teens: Self=-identification, self-construction and self-awareness. *Journal of Librarianship and Information Science, 43*(1), 46-55.

IEA (2019). IEA International Database Analyzer (IDB Analyser) (Version 4.0). Hamburg, Germany. (Available from www.iea.nl/data-tools/tools).

International Labor Office. (2012). *International standard classification of occupations. ISCO-08. Vol. 1. Structure, group definitions and correspondence tables.* Geneva: Author.

Kanniainen, L., Kiili, C., Tolvanen, A., Aro, M., & Leppänen, P. H. T. (2019). Literacy skills and online research and comprehension: struggling readers face difficulties online. *Reading and Writing. An Interdisciplinary Journal, 32*(9), 2201–2222. http://doi.org/10.1007/s11145-019-09944-9.

Kirsch, I., de Jong, J., Lafontaine, D., McQueen, J., Mendelovits, J., & Monseur, C. (2002). *Reading for change: Performance and engagement across countries: Results from PISA 2000*. Paris: OECD.

LaRoche, S., & Cartwright, F. (2010). *Independent review of the PISA 2009 results for Ireland: Report prepared for the Educational Research Centre at the request of the Department of Education and Skills*. Dublin: Department of Education and Skills.

Lipko-Speed, A., J. Dunlosky, J., & Rawson, K. (2014), "Does testing with feedback help year-school children learn key concepts in science?", *Journal of Applied Research in Memory and Cognition*, Vol. 3/3, pp. 171-176, http://dx.doi.org/10.1016/J.JARMAC.2014.04.002.

McKeown, C., Denner, S., McAteer, S. and Shiel, G., with O'Keeffe, L. (2019). *Learning for the Future: The performance of 15-Year-olds in Ireland on reading literacy, science and mathematics in PISA 2018*. Dublin: ERC.

Mullis, I. V. S., Martin, M. O., Foy, P., & Hooper, M. (2017). *PIRLS 2016 international results in reading*. Retrieved from Boston College, TIMSS & PIRLS International Study Center. Accessed at: http://timssandpirls.bc.edu/pirls2016/international-results/.

Muthén, K., & Muthén, B. (2017). *M Plus user's guide (8th edition).* Los Angeles, CA: Authors.

Muthén, L.K. & Muthén, B.O. (2017). *MPlus statistical analysis with latent variables. User's guide* (Version 8). Los Angeles: Authors/ www.StatModel.com.

Nelis, S.M., Gilleece, L., Fitzgerald, C., & Cosgrove, J. (2021*). Beyond achievement: home, school and wellbeing findings from PISA 2018 for students in DEIS and non-DEIS schools*. Dublin: Educational Research Centre.

NCCA. (2018). *Junior Cycle English.* Dublin: Author.

NCCA (2019). *Guidelines for the classroom-based assessment and assessment tasks.* Dublin: Author.

OECD. (1999). *Classifying educational programmes: Manual for ISCED-97 implementation in OECD Countries. Paris: OECD Publishing,* http://www.oecd.org/education/1841854.pdf.

OECD. (1999). *Measuring student knowledge and skills: A new framework for assessment*. Paris: Author.

OECD. (2009). *PISA 2009 assessment framework: Key competencies in reading, mathematics and science*. Paris: Author.

OECD (2010a), *PISA 2009 Results: Learning to Learn – Student Engagement, Strategies and Practices (Volume III)* http://dx.doi.org/10.1787/9789264083943-en.

OECD. (2010b). *PISA 2009 results. Learning trends. Changes in performance since 2000. Vol. 5.* Paris: Author.

OECD. (2011). *PISA 2009 technical report*. Paris. OECD.

OECD. (2017). *PISA 2015 Technical Report. Paris: OECD Publishing.*

OECD. (2019a). *PISA 2018 assessment and analytical framework*. Paris: OECD Publishing.

OECD. (2019b). *PISA 2018 Results Volume 1: What students know and can do*. Paris: OECD Publishing.

OECD. (2019c). *PISA 2018 Results Volume 2: Where all students can succeed.* Paris: OECD Publishing.

OECD. (2019d) *PISA 2018 Results Volume 3: What school life means for students' lives.* Paris: OECD Publishing.

OECD. (2020). *PISA 2018 Technical Report.* https://www.oecd.org/pisa/pisa-for-development/pisafordevelopment2018technicalreport/.

OECD (2021), *21st-century readers: Developing literacy skills in a digital world.* Paris: OECD Publishing, https://doi.org/10.1787/a83d84cb-en.

OECD and UNESCO Institute of Statistics. (2003). *Literacy skills for the world of tomorrow: Further results of PISA 2000*. Paris: OECD and UNESCO.

Perkins, R., Moran, G., Shiel, G., & Cosgrove, J. (2011). *Reading literacy in PISA 2009: A guide for teachers.* Dublin: Educational Research Centre.

Perkins, R., Cosgrove, J., Moran, G., & Shiel, G. (2012). *PISA 2009: Results for Ireland and changes since 2000*. Dublin: Educational Research Centre.

Perkins, R., Shiel, G., Merriman, B., Cosgrove, J., & Moran, G. (2013). *Learning for life: The achievements of 15-year-olds in Ireland on mathematics, reading literacy and science in PISA 2012*. E-appendix Table A7.20. Dublin: Educational Research Centre.

Pitzer, J. and E. Skinner (2017), "Predictors of changes in students' motivational resilience over the school year", *International Journal of Behavioral Development*, Vol. 41/1, pp. 15-29, http://dx.doi.org/10.1177/0165025416642051.

Rawdon, C., Sampson, K., Gilleece, L., & Cosgrove, J. (2020). *Developing an evaluation framework for teachers' professional learning in Ireland: Phase 1 Desk-based research.* Dublin: Educational Research Centre.

Ricard, N. and L. Pelletier (2016), Dropping out of high school: The role of parent and teacher self-determination support, reciprocal friendships and academic motivation, *Contemporary Educational Psychology*, *44-45*, pp. 32-40, http://dx.doi.org/10.1016/J.CEDPSYCH.2015.12.003.

Sachse, K.A., Mahler, N., & Pohl, S. (2019). When nonresponse mechanisms change: Effects on trends and group comparisons in international large-scale assessments. *Educational and Psychological Measurement, 79 (4),* 699-726.

Shanahan, C., & Shanahan, T. (2020). Disciplinary literacy. In J. Patterson (Ed.), *The SAT suite and classroom practice: English language arts/literacy*. New York: College Board.

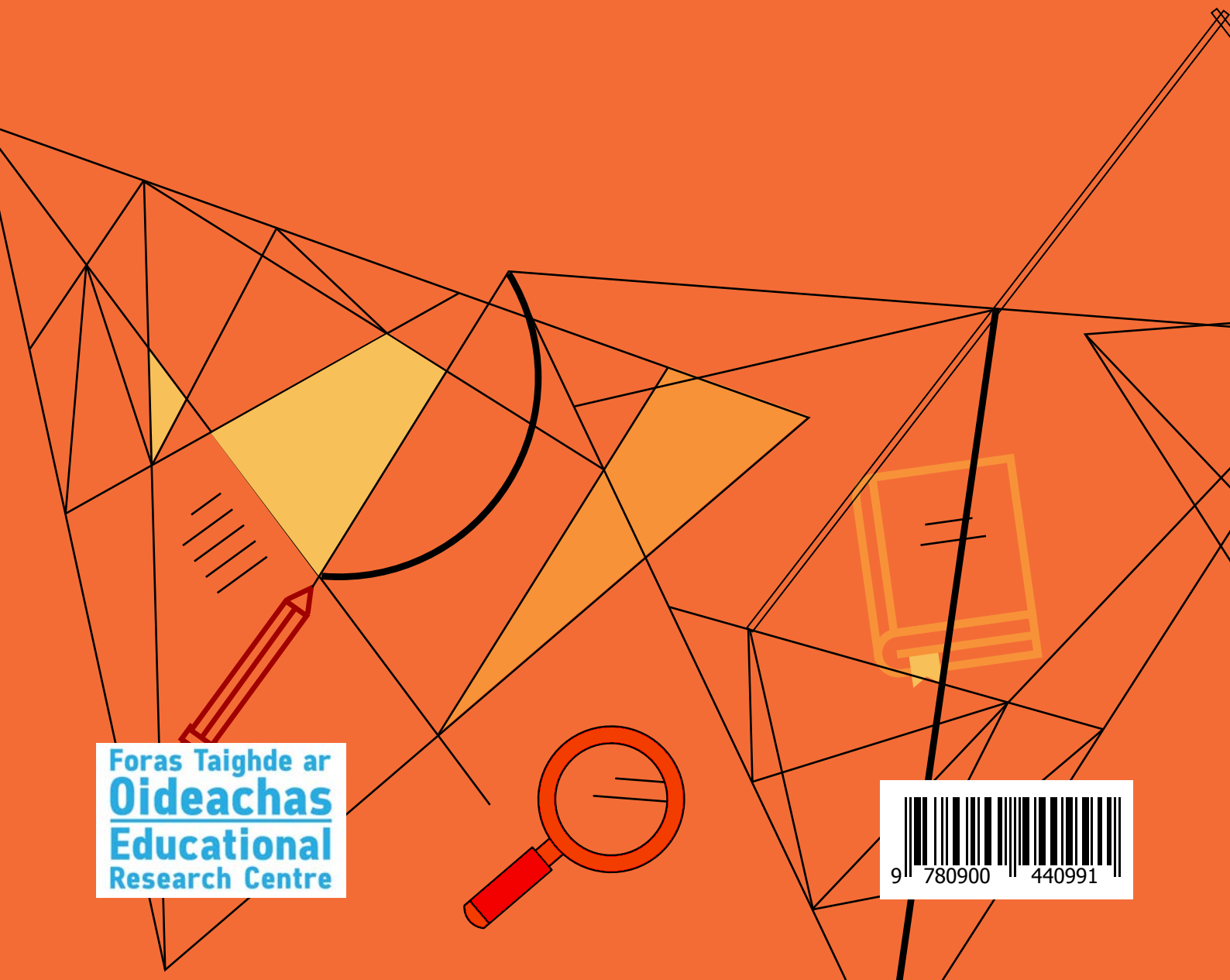
Shiel, G., Cosgrove, J., Sofroniou, N., & Kelly, A. (2001). *Ready for life? The literacy achievements of Irish 15-year olds with comparative international data*. Dublin: Educational Research Centre.

Shiel, G., Kelleher, C., McKeown, C., & Denner, S. (2016). *Future ready? The performance of 15-year-olds in Ireland on science, reading literacy and mathematics in PISA 2015*. Dublin: Educational Research Centre.

Tunstall, P. & Gipps, C. (1996). Teacher feedback to young children in formative assessment: A typology, *British Educational Research Journal*, 22(4), pp. 389-404, http://dx.doi.org/10.1080/0141192960220402.

United Nations Statistics Division. (2019). *Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development*, https://unstats.un.org/sdgs/indicators/indicators-list/ (accessed on 13 November 2020).

Wilkinson, K., Andries, V., Howarth, D., Bonsall, J., Sabeti, S., & McGeown, D. (2020). Reading during adolescence: Why adolescents choose (or do not choose) books. *Journal of Adolescent and Adult Literacy, 64*(2), 157-166. https://doi.org/10.1002/jaal.1065



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