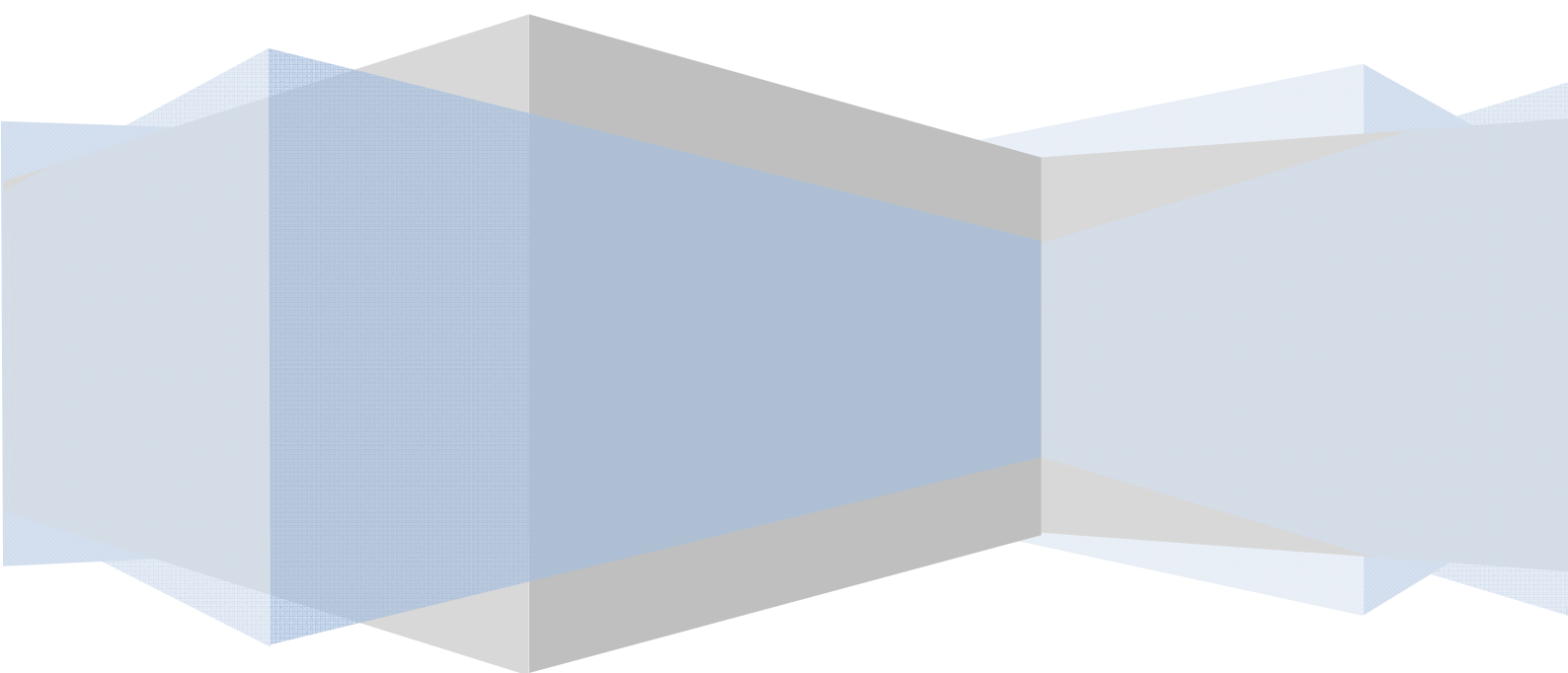


Reading Literacy in PISA 2009: A Guide for Teachers

Rachel Perkins, Gráinne Moran, Gerry Shiel and Jude Cosgrove



Educational Research Centre

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Preface

The OECD's Programme for International Assessment (PISA) is an international assessment of the skills and knowledge of 15-year-olds in reading, mathematics and science. PISA runs in three-yearly cycles, with one subject area becoming the main focus of the assessment in each cycle. Reading was the main focus of the assessment when PISA was first conducted in 2000. In 2009, reading became the main focus of PISA for the second time, allowing a detailed examination of changes in reading performance and attitudes towards reading over time. A new element of PISA 2009 was the assessment of digital reading literacy in 19 countries, including Ireland. This assessment was administered to a subsample of students who also participated in the print assessment.

This guide is intended not only for teachers of English in post-primary schools but also subject teachers more generally, as well as school management. It focuses on the performance of 15-year-old students in Ireland in both the print and digital reading assessments in 2009, compared to students in other countries. The guide also examines factors associated with reading achievement and attempts to explain changes in reading achievement over time and reports on the results of a teacher survey conducted in Ireland.

This guide is divided into nine chapters. Chapter 1 looks at the changing nature of adolescent literacy, the performance of students in Ireland on reading literacy in earlier PISA assessments, factors associated with reading literacy, and relationships between curriculum and PISA. Chapter 2 explains how PISA assesses reading and describes the administration of PISA 2009 in Ireland. Chapter 3 presents some examples of PISA questions from both the print and digital assessments. The performance of students in Ireland on print reading is described in Chapter 4, while Chapter 5 examines student performance on digital reading. Chapter 6 looks at student and school characteristics related to PISA reading and Chapter 7 explores students' attitudes towards and engagement with reading. Chapter 8 presents the results from the teacher questionnaire which was administered in Ireland to teachers of Third Year English in conjunction with PISA 2009. Finally, Chapter 9 summarises the findings and makes recommendations for literacy development in schools and classrooms.

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The Centre gratefully acknowledges the help of the PISA national advisory committee during the implementation of PISA 2009 in Ireland. In addition to the authors of this guide the committee members were Éamonn Murtagh (Department of Education and Skills, Chair), George Porter (Department of Education and Skills), Elizabeth Oldham and Philip Matthews (Trinity College, Dublin), Brian Murphy (University College Cork), Hal O'Neill (National Council for Curriculum and Assessment), Aideen Cassidy (formerly Junior Certificate School Programme National Co-ordinator), Hugh McManus (State Examinations Commission), Conor Galvin (University College Dublin) and Alison Graham (Sandford Park School).

Thanks are due to the staff at the Educational Research Centre, including Peter Archer (acting Director), Thomas Kellaghan (former Director), John Coyle, Eemer Eivers, Mary Rohan, Hilary Walshe and Paula Chute. We would also like to thank Emma Pybus who worked as a research assistant on PISA in Ireland until September 2008. Finally, thanks are also due to all the students and schools that took part in PISA 2009. Without their participation PISA could not have been carried out.

Further Information on PISA

OECD PISA website: <http://www.pisa.oecd.org>

(includes all international PISA publications and sample PISA tasks for the print assessments)

Sample tasks from the PISA 2009 assessment of digital reading: <http://erasq.acer.edu.au>

(login = public; password = access)

Irish PISA website: <http://www.erc.ie/pisa>

(includes all national PISA publications, including technical comparisons of results across cycles, and general information)

National PISA contact: pisa@erc.ie

Chapter 1: Introduction

The purpose of this Guide, the fourth in a series that began with PISA 2000, and the second on the topic of reading literacy (see Cosgrove, Sofroniou, Kelly & Shiel, 2003), is to inform subject teachers, including teachers of English, and school leaders about the outcomes of PISA 2009, and to identify ways in which the outcomes can be used to inform teaching and learning in schools and classrooms. Results are also considered in the broader context of the Department of Education and Skills' (DES) *National Strategy to Improve Literacy and Numeracy among Children and Young People 2011-2020* (DES, 2011). At the end of each chapter, we provide a short summary of key points under 'Chapter Highlights'.

This chapter establishes a broad context for reflecting on the outcomes of PISA 2009 in reading literacy. First, it looks at ways in which our understanding of literacy has changed in recent years to incorporate new insights and new literacies. Second, it reviews the performance of students in Ireland in earlier studies of PISA reading literacy. The third and fourth sections examine associations between gender and literacy, and between socio-cultural context and literacy, respectively. The fifth considers links between curriculum and PISA reading literacy and also looks at current developments in curriculum and assessment in Ireland.

Readers interested in an international treatment of results from PISA 2009 are referred to the OECD's report, published in six volumes (OECD, 2010, a, b, c, d, e; OECD, 2011a), as well as the Educational Research Centre's website where additional reports and information may be found (www.erc.ie).

The Changing Nature of Literacy

In the past, literacy was often conceptualised in terms of basic reading skills such as decoding or literal comprehension. Instruction in literacy was discontinued once students showed some ability to read accurately and with fluency. Literacy was often viewed as the responsibility of primary schools. More recently, it has been recognised that literacy skills develop over a lifetime, and that, like the early years of schooling, adolescence is a critical time for developing literacy skills and attitudes. In this section, the importance of two new literacies – disciplinary (subject area) literacy and digital reading literacy – is considered.

Disciplinary Literacy

It is acknowledged internationally that basic skills are no longer sufficient if students are to read, write and reason (solve problems) effectively across a range of subjects (Heller & Greenleaf, 2007). Literacy is viewed as a set of skills and practices that develop well into adolescence and beyond. But what is adolescent literacy? The US National Council for Teachers of English (NCTE) has defined adolescent literacy as follows:

Adolescent literacy involves social and cognitive processes. It helps individuals discover ideas and make meaning. It enables functions such as analysis, synthesis, organisation and evaluation. It fosters the expression of ideas and opinions, and extends to understanding how texts are created and how meanings are conveyed by various media, brought together in productive ways (NCTE, 2006, p. 5).

This definition, with its emphasis on reasoning skills and multi-media literacies, is broadly consistent with the Department of Education and Skills' definition in its *National Strategy 2011-2020* (DES, 2011): 'Literacy includes the capacity to read, understand and

critically appreciate various forms of communication including spoken language, printed text, broadcast media and digital media’ (p. 8).

The literature also points out that adolescent literacy is interdisciplinary – that is, it encompasses fields such as science, mathematics and the social sciences as well as English. This recognition has led to the concept of disciplinary literacy – the notion that, in addition to literacy skills that can be generalised across all subjects (for example, decoding words and understanding the meanings of commonly-used words), there are literacy skills that are unique to particular subject areas. Kamil et al. (2008) argue that students should be supported in developing these skills in the individual disciplines in which they are required (including English) (see Chapter 9 of this report).

Traditionally, in Ireland, teachers may not have emphasised the teaching of literacy in their subject area lessons for a variety of reasons:

- A view of literacy as mainly comprising basic decoding and spelling skills.
- A view that subject teachers are not responsible for teaching literacy skills related to their discipline.
- Lack of support at school level for integrating the teaching of literacy into subject area lessons.
- Lack of access to professional development that would support such integration.

The *National Strategy 2011-2020* (DES, 2011) recognises the importance of disciplinary literacy when it calls for the upskilling of subject teachers in post-primary schools so that they can exploit opportunities for literacy learning in their subjects at the planning and instructional stages of teaching. A framework designed to support schools and teachers in implementing a whole-school literacy policy that includes disciplinary literacy has been published by the Junior Certificate School Programme¹ (Cassidy & Kiely, 2008). Implications of PISA for teaching literacy across different areas of the curriculum are considered further in Chapter 9.

Digital Reading Literacy

In recent years, there has been a substantial increase in adolescents’ engagement with digital literacies. This development is manifested in PISA in two significant ways. First, since 2000, PISA has included a series of questions about students’ access to and use of technology at home and at school. Second, PISA 2009 included, for the first time, an assessment of digital reading, alongside the traditional print-based assessment of reading (results for both are covered in this report).

A crucial issue for schools and teachers is the extent to which students’ development of digital literacies is supported through the provision of opportunities to engage in relevant and challenging digital reading literacy activities as part of English and other subjects, and through direct teaching of digital reading literacy skills. In relation to the latter, it has been argued that there are important differences between print and digital texts in terms of how text is produced, displayed, organised and connected to other texts. A consequence is that, while there may be many skills that are common to printed and digital texts (e.g., locating key pieces of information, interpreting nuances of language, drawing on prior knowledge of textual and linguistic structures and features), there are also unique skills required for effective digital reading, and schools can promote these. For example, according to Leu et al. (2008), comprehension of online digital texts involves generating questions and then locating,

¹ The Junior Certificate School Programme, which targets students who are at risk of literacy difficulties and early school leaving, was introduced in 1996, and is now available at over 240 institutions including schools.

critically evaluating, synthesizing and communicating possible solutions to those questions online. They note that online comprehension is defined not only by the purpose, task and context, but also by a process of self-directed text construction (a type of digital metacognitive knowledge). Readers need to use navigational devices (including understanding the hierarchical structure of information in menu trees) and accumulate information across multiple texts. Pazzaglia, Toso and Cacciamani (2008) argue that the reading of complex visual texts relies on visuo-spatial abilities as much as on language processing abilities. Some students will need support in acquiring and applying these skills in meaningful academic contexts.

Warschauer (2007) argues that the skills fostered by digital media make traditional literacy skills (decoding, vocabulary, fluency, basic comprehension skills, etc.) more valuable than ever. Related to this, he states that ‘competence in traditional literacies is often a gateway to successful entry into the world of new literacies’ (p. 43). Conversely, students who are not competent in traditional (print-based) literacies might be limited in their ability to benefit from the new literacies. Hence, it seems important for students to develop strong print *and* digital reading literacy skills.

The assessment of digital reading literacy in PISA 2009 made possible a comparison between performance on the print and digital reading tasks, and presented an opportunity to examine the effectiveness of students’ navigational skills as they interacted with digital texts.

Reading Literacy in Earlier PISA Assessments

In 2009, PISA was administered to a nationally-representative sample of 15-year-olds for the fourth time since 2000. The number of countries participating in PISA has increased during that time. In PISA 2000, 32 countries, including 28 OECD member states, took part. In 2009, 65 countries, including 34 OECD member and candidate states were involved.

PISA assesses reading, mathematical and scientific literacy. In both 2000 and 2009, reading was a major assessment domain, meaning that all students completed at least some reading questions, while some students also completed mathematics and science questions. The designation of reading literacy as a major domain in 2009 allowed for a detailed analysis of student performance in that domain, and also for comparisons with performance in 2000. For example, in 2000 and 2009, it was possible to look at the performance of countries on reading subscales such as scales based on continuous and non-continuous texts. In 2003 and 2006, it was possible only to look at overall reading performance.

The designation of reading literacy as a major assessment domain in 2000 and 2009 also meant that, in both years, students completed extensive questionnaires about their reading attitudes, interests and practices. This allowed for a detailed comparison of students’ reading habits and their engagement with reading in both years. In 2009 (but not 2000), students’ awareness of the value of using specific reading strategies was also assessed.

Students in Ireland performed well on reading literacy in the first three cycles of PISA with mean scores on print-based reading that were significantly above the OECD average in 2000, 2003 and 2006. In 2000, Ireland ranked 5th among participating OECD countries. Although there was a small and not statistically significant drop in average achievement in Ireland in 2003, Ireland’s ranking among OECD countries was 6th. In 2006, it was 5th.

Perhaps more informative than examining overall average performance is the distribution of performance, i.e., the percentages of high and low achievers, which PISA defines in terms of **proficiency levels** (shaded text is explained in the *Glossary of Terms* at the end of the report). Students scoring below Level 2 are deemed to be likely to have

insufficient knowledge and skills for effective participation in future education, work and society, while those performing at Level 5 or above are considered to be advanced readers.

In PISA 2000, 11% of students in Ireland (14% of males and 8% of females) were classified as low performers, compared with 18% across OECD countries on average. By 2006, 12% of students in Ireland (17% of males and 8% of females) were classified as low performers, which again is lower than the OECD average of 20%. In 2000, 14% of students in Ireland were classified as high performers, compared with 10% on average across OECD countries. By 2006, 12% of students in Ireland, and 9% on average across OECD countries were classified in this way. In both 2000 and 2006, there were fewer high-performing males than females in Ireland and on average across OECD countries. In the next section, gender differences in earlier PISA assessments are examined in greater detail.

Gender and Reading Literacy

A consistent outcome in earlier cycles of PISA has been the low performance of male students compared with females on reading literacy in virtually every participating country (OECD, 2009a). In 2006, the gaps in Ireland and on average across OECD countries exceeded one-third of an international standard deviation. In the same year, as noted earlier, over twice as many male students in Ireland (17%) as females (8%) performed at or below Level 1 (the lowest proficiency level). However, as Murphy (2009) has pointed out, gender as it relates to achievement does not operate independently of other factors such as socioeconomic status and engagement in reading. For example, in PISA 2000, as well as performing at a significantly lower level than female students, male students in Ireland had significantly lower scores on an index of engagement in reading (a measure based on frequency of leisure reading, attitude to reading and diversity of reading materials read) (Kirsch et al., 2002).

Some aspects of the PISA test design may contribute to gender differences. While female students in OECD countries in PISA 2000 achieved higher average scores on scales based on both continuous and non-continuous texts, the gender difference on non-continuous texts was only half of that on continuous texts (Kirsch et al., 2002, Table 6.2a). Similarly, the gap in favour of females was considerably smaller on the Retrieve scale, compared with the Interpret and Reflect/Evaluate scales (OECD, 2001). This suggests that reading tests with a heavy emphasis on narrative texts and ‘Reflect/Evaluate’ questions (which often require written answers) might favour female students.

Broadly speaking, three explanations for gender differences in reading and related areas have been put forward. One points to biological differences, the second to socio-cultural differences, and the third to differential disaffection with the types of literacy promoted by schools. The biological differences view posits that brain differences between males and females account for observed gender differences, with females viewed as having a brain structure that is more suited to reading than that of boys (e.g., Gurian & Stevens, 2004). The socio-cultural differences view argues that gender differences arise from social situations, being both an outcome of and a rationale for such situations (West & Zimmerman, 1991). For example, it has been argued that boys’ difficulties with literacy in school are a function of hegemonic masculinities, whereby definitions of masculinity constrain what young men see as acceptable masculine behaviour (i.e., boys view literacy as feminised) (e.g., Martino, 2009). A related aspect is the way in which the media portrays literacy, often showing females reading in private situations or with other females (Smith & Wilhelm, 2009). The third explanation – disaffection with the literacies privileged by schools – is evidenced by the low levels of engagement in reading among boys. The *National Strategy*

2011-2020 (DES, 2011) appears to subscribe to this view when it states that ‘a lack of opportunity to engage with non-literary texts and other texts in which boys tend to show an interest has an adverse impact on the participation and achievement of boys’ (p. 51).

PISA 2009 provides an opportunity to explore gender differences in both print and digital reading contexts. Moreover, it allows for an examination of students’ engagement in these different contexts, and how reading literacy performance varies by gender and engagement.

Socio-Cultural Contexts and Reading Literacy

The Irish education system has experienced a number of changes in the school-going population since 2000, when reading literacy last enjoyed the status of a major assessment domain in PISA. There have been significant increases in the proportion of students from an immigrant background and in the proportion who report speaking a language other than English or Irish at home.

A useful way of thinking about the literacy performance of marginalised and minority groups is to consider multiple effects at different levels – home and community, education system, school, classroom/subject area and individual student. Each of these different but inter-related layers has some influence on a student’s reading performance and their engagement in reading. For example, the structure of the education system may determine in part or in whole the types of schools that students attend and how schools are organised, which may, in turn, impact on achievement. Similarly, as noted earlier, the type of instruction in reading literacy that students receive in their subject area classes (including English) may impact on their reading proficiency. PISA provides an opportunity to examine how these different layers vary across countries, allowing individual countries to identify aspects of their systems that seem to operate to the advantage of students in general, and those that may serve students less well. Indeed, equity in educational outcomes – the extent of the achievement gap between students in different groups – is a major theme of PISA, and is considered in detail in Chapter 6 of this Guide.

Curriculum and PISA

The current Junior Cycle (JC) English syllabus (Department of Education, n.d.a) was first implemented in 1989, and has not changed since then. According to the NCCA website, English ‘is one of the syllabuses currently undergoing a rebalancing process, in a move towards presenting all Junior Cycle syllabuses in similar formats’ (NCCA, 2011). This section looks at links between the English curriculum and PISA, and highlights some shortcomings in the implementation of the syllabus in classroom settings.

A key objective of the teaching of English at Junior Cycle is to

‘...reinforce and continue the work of the primary school in nurturing the intellectual, imaginative and emotional growth of each student to develop his/her personal proficiency in the arts and skills of language. This proficiency involves three dynamically interrelated elements: personal literacy, social literacy and cultural literacy’ (Department of Education, JC English Syllabus, n.d.b).

The focus on personal, social and cultural literacies echoes the multiple contexts of literacy described in the PISA assessment framework (personal, educational, occupational and public) (see Chapter 2 of this Guide). The syllabus also states that ‘the student should be introduced to the range of linguistic skills demanded by society and be encouraged to use them accurately’ (Department of Education, n.d.a, p. 2). This resonates with PISA’s stated

aim of assessing students' competence in the types of reading literacy tasks required by society (OECD, 2009b, p. 24).

While the assessment objectives for the English syllabus include those relating to oral and aural language, grades in the terminal exam (which can be taken at Higher, Ordinary or Foundation level) are based on performance on written papers only. The following are among the skills students taking the exam at Ordinary and Higher levels are expected to demonstrate:

- To understand and convey information
- To understand facts, ideas and opinions and to order and present them with clarity and accuracy
- To analyse, evaluate and select what is relevant for a given purpose
- To understand clear meanings and explicit attitudes and the most obvious, implicit meanings and attitudes
- To show a sense of audience and an awareness of appropriate uses of language
- To show and express responses to a variety of literary genres
- To show understanding of how language works in literature (Department of Education, JC English Syllabus, n.d.a, pp. 9-10).

All of these skills are found in the PISA framework for reading literacy. Each relates to at least one of the aspects of reading literacy assessed in PISA: Access and Retrieve, Integrate and Interpret, and Reflect and Evaluate (see Chapter 2). Hence, where print reading is concerned, there are several commonalities between the Junior Cycle English syllabus and PISA. Further evidence of links between the syllabus and PISA was highlighted by Shiel, Cosgrove, Sofroniou & Kelly (2001), who reported that the reading processes underlying 89% of the items in PISA 2000 were judged by curriculum and assessment experts to be 'very familiar' or 'somewhat familiar' to students taking Higher level English, 90% to those taking Ordinary level, and 75% to those taking Foundation level. Further, 86%, 82% and 50% of the contexts/applications (i.e., genre, text length, density) in which PISA items appeared were judged to be 'very familiar' or 'familiar' to students taking Higher, Ordinary and Foundation levels respectively.

The Teacher Guidelines accompanying the syllabus (Department of Education, n.d.b) discuss the importance of teaching basic literacy skills to students in need of support, and specific strategies are suggested: cloze procedure, sequencing, prediction, vocabulary building through games, using context clues, and directed limited comprehension tasks. This suggests an integrated, language-based approach to addressing reading difficulties. The Junior Certificate School Programme (JCSP; Cassidy & Kiely, 2008; NCCA, 2010), which was first implemented in 1996, and now extends to 240 institutions, including schools in DEIS² and special schools, is also designed to support students with weak literacy skills. However, it is unclear to what extent or to what effect lower-achieving students in schools in general, or in schools implementing the JCSP in particular, are provided with direct instruction in developing decoding skills and reading fluency – two important component skills of reading (OECD, 2009b).

A report by the Inspectorate of the DES provides some information on the quality of the teaching and learning of English in post-primary schools (DES, 2006). The report, which is based on inspections of schools between January 2005 and May 2006, highlights some differences between the intended curriculum (as specified in documents such as the Junior

² Delivering Equality of Opportunity in Schools (DEIS) is a programme that focuses on addressing the educational needs of children and young people from disadvantaged communities, from pre-school through second-level education (3 to 18 years) (DES, 2005a).

Certificate English syllabus) and the implemented curriculum (what was observed in classrooms). While the report provided many examples of good practice, several weaknesses in implementation were also noted:

- An inadequate number of JC English lessons (four or fewer per week) in a majority of schools
- A focus on delivery of content rather than on development of skills
- A lack of coherence in provision and delivery of support to international students entitled to language support
- Streaming of students before the end of Second Year
- Lack of resources for teaching English in some classrooms
- Failure of schools to make optimal use of school libraries, where they exist
- Variation between teachers in access to continuous professional development for English
- Poorly specified learning outcomes
- The treatment of grammar and syntax in isolation rather than in the context of real texts.

The *National Strategy 2011-2020* (DES, 2011) recognised how some of these shortcomings may be related to the effects of examinations:

The open nature of the Junior Certificate syllabus in English gives freedom to teachers to engage with rich and varied literary and non-literary texts. However, the opportunity provided by the syllabus to engage students with a range of literary and non-literary texts and develop literacy skills, including oral language skills, is not fully exploited in classrooms due to a focus on teaching to the examination and an overuse of textbooks which largely promote lower-order skills (p. 51).

Chapter Highlights

The purpose of this Guide is to inform subject teachers, including teachers of English, about the outcomes of PISA 2009, to identify ways in which the outcomes can be used to inform teaching and learning, and to contribute to the current debate on reform at Junior Cycle level.

Internationally, reading literacy is viewed as a set of skills and practices that develop well into adolescence and beyond. Reading literacy is also viewed as being interdisciplinary, such that some literacy skills can be generalised across all subjects, while others are unique to particular subject areas, and therefore may need to be learned by students within those areas.

Digital reading literacy can be viewed as comprising two overlapping clusters of skills: those that are required for all reading (both print-based and digital), and those that are unique to digital reading. The latter include strategic use of navigational tools and the ability to accumulate relevant information across multiple texts. Thus, while print reading skills continue to be important, students may need support in developing digital reading skills. Both print and digital reading were assessed in PISA 2009 and the outcomes and their implications for Ireland are considered in this Guide.

PISA 2009 is the second time in which PISA has designated reading literacy as a major assessment domain, allowing for a detailed description of performance in reading across different types of texts and reading comprehension processes. It also allows for a detailed analysis of trends in reading literacy since 2000, when reading literacy was last designated as a major assessment domain.

Since engagement in reading was a focus of the PISA student questionnaires in both cycles, PISA 2009 also provides an opportunity to describe the reading practices of students, and how these have changed since 2000.

Previous PISA assessments show that female students significantly outperform male students, with the differences greatest on questions based on continuous texts, and on questions assessing higher-order reading skills that require written responses. PISA 2009 provides an opportunity to look at gender differences in reading in detail, including differences relating to print and digital texts.

There have been significant demographic changes in Ireland between PISA 2000 and PISA 2009, including increases in the proportion of students with an immigrant background and increases in the proportion of students speaking a language other than English or Irish at home. PISA 2009 provides an opportunity to look at the reading literacy performance of these and other subgroups of students.

Finally, the outcomes of PISA 2009 have become available at a time when significant changes to syllabuses and examinations at Junior Cycle level are under consideration, and hence their implications for curriculum development and assessment at Junior Cycle level should be considered.

Chapter 2: How does PISA Assess Reading?

What is PISA?

The OECD's Programme for International Student Assessment (PISA) is an international survey which has taken place every three years since 2000. PISA assesses the skills and knowledge of 15-year-olds in reading, mathematics and science. In each cycle, one subject area becomes the main focus, or 'major **domain**' of the assessment. Reading, which was the major domain in the first cycle in 2000, became the main focus for a second time in 2009. Therefore, PISA 2009 offers a first opportunity to examine in detail changes in reading achievement and practices over time.

A new element of PISA which was introduced in 2009 is an assessment of how well students read digital texts. This assessment, which was conducted along with the print assessment in 19 countries, adds value to the print assessment in that the performance of the same students can be compared across print and digital texts. Approximately 470,000 students in 65 countries, including Ireland, participated in PISA 2009, making it the largest international survey of education to date (see Table 2.1).

Table 2.1: Countries Participating in PISA 2009

OECD Countries		Partner Countries/Economies	
Australia	Japan	Albania	Lithuania
Austria	Korea	Argentina	Macao-China
Belgium	Luxembourg	Azerbaijan	Montenegro, Republic of
Canada	Mexico	Brazil	Panama
Chile	Netherlands	Bulgaria	Peru
Czech Republic	New Zealand	China (Shanghai)	Qatar
Denmark	Norway	Chinese Taipei	Romania
Estonia	Poland	Colombia	Russian Federation
Finland	Portugal	Croatia	Serbia, Republic of
France	Slovak Republic	Dubai	Singapore
Germany	Slovenia	Hong Kong-China	Thailand
Greece	Spain	Indonesia	Trinidad and Tobago
Hungary	Sweden	Jordan	Tunisia
Iceland	Switzerland	Kazakhstan	Uruguay
Ireland	Turkey	Kyrgyzstan	
Israel	United Kingdom	Latvia	
Italy	United States	Liechtenstein	

Note: countries that also participated in the digital reading assessment are in bold.

Schools and Students that Took Part in PISA 2009

In Ireland, 160 schools were randomly selected, based on size, sector (secondary, community/comprehensive, vocational), gender composition and socio-economic composition to ensure a nationally representative mix. Of these, 144 schools, or 90% of selected schools, took part.³ In each of these schools, up to 35 15-year-old students were randomly selected to participate in the print assessment. Up to 15 of the students who participated in the print assessment were also randomly selected to participate in the assessment of digital reading. In total, 3,937 students (or 84% of selected students) completed the print assessment, while 1,429 (or 70% of selected students)⁴ completed the assessment of

³ The weighted participation rate for schools in PISA 2009 is 88%.

⁴ Student response rates are weighted.

digital reading. Most students (59%) were in Third Year, while 24% were in Transition Year, just over 14% were in Fifth Year and just under 3% were in First or Second Year.

The PISA 2009 Reading Framework

The PISA reading assessments (both print and digital) are guided by a framework that defines what reading literacy is. For PISA 2009, reading literacy is defined as ‘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, 2009b, p. 25). This definition of reading is applicable to both print and digital reading, as digital texts are considered to be a subset of written texts. In PISA, the term literacy is used to express ‘the active, purposeful and functional application of reading in a range of situations and for various purposes’ (OECD, 2009b, p. 23). To assess reading, PISA organises texts, followed by questions (or stimuli, followed by items or tasks) into *units*. Examples of reading units used in PISA 2009 are given in Chapter 3.

The PISA 2009 definition of reading literacy builds on that used in PISA 2000 by including engagement in reading and metacognition as components of reading literacy. Motivational and behavioural elements of reading literacy have been shown to be linked strongly with reading proficiency. For example, it has been found that reading practices account for more variance in reading achievement than any other variable with the exception of prior achievement (Guthrie & Wigfield, 2000). In PISA, reading engagement includes interest in reading, perceived control and self-direction of reading activities, social goals for reading and the frequency of participating in different types of reading activities.

Metacognition in reading refers to the awareness of, and ability to use, a variety of appropriate strategies when processing texts in a goal-oriented manner. Like reading engagement, metacognition has a strong **correlation** with reading achievement, and instruction in metacognitive strategies has been linked to improved text understanding and information use (see Artelt, Schiefele, & Schneider, 2001; Brown, Palincsar, & Armbruster, 2004). Metacognition was assessed in PISA by asking students to evaluate the quality and usefulness of a number of reading comprehension and learning strategies.

The PISA reading literacy assessment is built on three dimensions: *situation*, *text* and *aspect*. All three contribute to ensuring broad coverage of the domain.

Situation

Situation refers to the contexts and purposes for which the text was constructed. Four situations are identified in PISA reading:

- Personal (e.g., letters, fiction, diary-style blogs)
- Public (e.g., public notices, news websites)
- Occupational (e.g., job advertisement in a newspaper or online)
- Educational (e.g., text books, interactive learning software).

These four categories overlap. For example, the purpose of a text might be for both personal interest and for instruction (personal and educational), though the practice has been to identify one over-riding category corresponding to each test item or task.

Text

Text refers to the type of material that is read. There are four main text classifications in PISA 2009: medium, environment, text format, and text type. **Medium** refers to the form in which texts are presented – print (paper) or electronic (hypertext). One of the main

differences between reading print and electronic texts is the use of navigation tools and features in electronic texts, such as scroll bars, buttons and index tabs.

Environment applies only to electronic-medium texts. Two kinds of environment have been identified in PISA: an *authored* environment (in which the content cannot be modified; e.g., a web page) and a *message-based* environment (in which the reader has the opportunity to add to or change the content; e.g., e-mail, blog). While *texts* can combine both types of environment, individual *tasks* in PISA tend to draw on either authored or message-based components of the text.

Text format refers to whether a text is continuous, non-continuous, mixed or multiple. Continuous texts are formed by sentences organised into paragraphs (e.g., newspaper reports, novels). Non-continuous texts, also known as documents, are composed of a number of lists (e.g., tables, schedules, forms). Mixed texts contain elements of both continuous and non-continuous formats and are commonly used in magazines and authored web pages. Multiple texts comprise discrete parts that are juxtaposed for a particular occasion or purpose.

A different categorisation of text is by **text type**. Five text types were identified for PISA 2009:

- Description (e.g., information report in prose, catalogue, blog diary)
- Narration (e.g., play, comic strip story)
- Exposition (e.g., book review, rating of online shopping item)
- Argumentation (e.g., advertisement, blog in an online forum)
- Instruction (e.g., recipe, instructions for operating software).

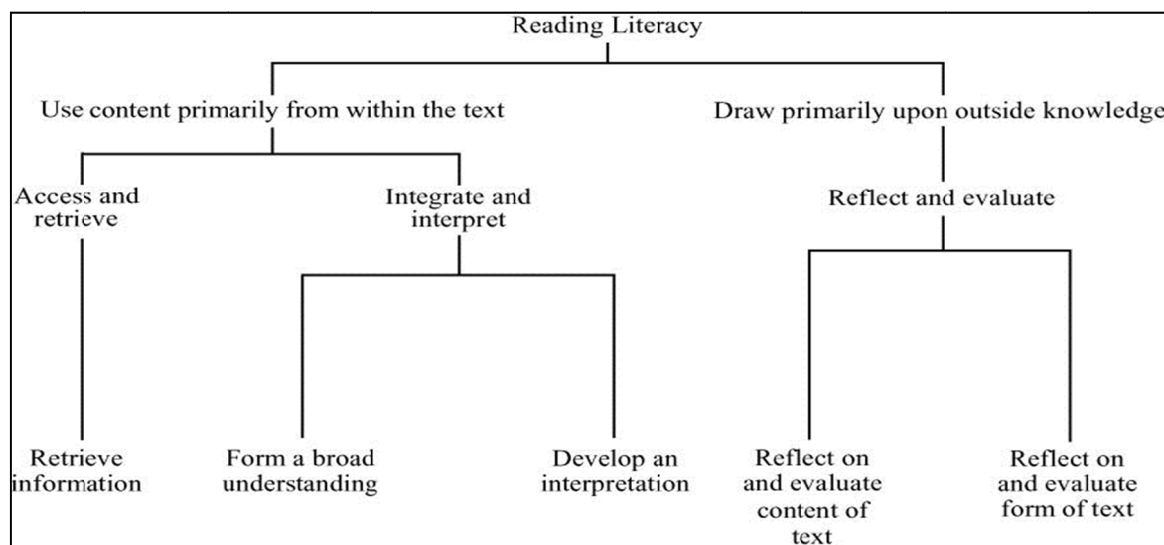
In previous versions of the reading framework, these text types were considered as subcategories of the continuous text format. In the 2009 framework, however, it is acknowledged that both continuous and non-continuous texts can have a descriptive, narrative, expository, argumentative or instructional purpose.

Aspects

Aspects are the cognitive skills that the reader uses in processing texts. Five aspects guided the development of reading literacy assessment tasks: retrieving information; forming a broad understanding; developing an interpretation; reflecting on and evaluating the content of a text; and reflecting on and evaluating the form of a text. For PISA 2009, these five aspects were organised into three broad aspect categories, and are reported as reading subscales (Figure 2.1):

- Access and Retrieve (navigating a text to locate and retrieve a particular piece of explicitly stated information)
- Integrate and Interpret (processing what is read to make internal sense of a text)
- Reflect and Evaluate (drawing upon knowledge, ideas or attitudes beyond the text in order to relate the information provided in the text to one's own conceptual and experiential frames of reference).

Figure 2.1: Relationship Between the Reading Framework and the Aspect Subscales



Source: OECD, 2009b, Figure 1.3.

A fourth aspect, *complex*, has been added to accommodate digital reading tasks that involve multiple demands. In digital reading, the cognitive processes described above are called upon for both text processing and navigation. Text processing refers to the skills and strategies typically associated with print reading, such as locating information, interpreting nuances of language, integrating different elements of the text, etc. Navigation involves ‘moving around the digital medium to access the information that is needed’ (OECD, 2011a, p. 42). Both navigation and text processing are required for digital reading tasks, with some tasks placing more emphasis on navigation and others on text processing.

The PISA 2009 reading assessment is based on the main elements of the reading literacy framework. The distribution of reading items by situation, aspect and text vary somewhat between print and digital reading (Table 2.2). For example, while the majority of print reading items are classified as continuous, just 7% of digital reading items are classified in this way and over three-quarters are classified as multiple texts.

Table 2.2: Distribution of 2009 Reading Items, Print Reading (N=107) and Digital Reading (N=29)

Situation	% Print reading	% Digital reading
Personal	29	21
Public	16	45
Occupational	28	24
Educational	27	10
Total	100	100
Environment	% Print reading	% Digital reading
Authored	0	66
Message-based	0	28
Mixed	0	6
Total	0	100
Text Structure	% Print reading	% Digital reading
Continuous	62	7
Non-continuous	29	10
Mixed	5	7
Multiple	4	76
Total	100	100
Text Type	% Print reading	% Digital reading
Argumentation	23	21
Description	23	31
Exposition	31	31
Instruction	8	14
Narration	15	3
Total	100	100
Aspect	% Print reading	% Digital reading
Access & retrieve	24	24
Integrate & interpret	51	35
Reflect & evaluate	25	21
Complex	0	21
Total	100	100

Note: totals may not be exactly 100 due to rounding.

PISA tasks are designed to emulate reading activities that readers may carry out in their everyday lives, either inside or outside of school, as an adolescent or as an adult. Examples of the sort of PISA tasks students completed in the print and digital reading assessments are presented in Chapter 3.

Chapter Highlights

PISA is an international survey of the knowledge and skills of 15-year-olds in reading, mathematics and science that has been implemented every three years since 2000. In 2009, PISA was implemented in 65 countries, including 34 OECD member/candidate countries. In Ireland, 3,937 students in 144 schools took part.

The PISA reading literacy framework encompasses both print and (for the first time in 2009) digital texts. Reading literacy is defined as ‘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, 2009a, p. 25).

The reading literacy assessment is built on three dimensions: *situation*, *text* and *aspect*. Situation refers to the contexts and purpose for which texts are constructed, i.e., *personal*, *public*, *occupational* and *educational*. Text refers to the type of material read. Texts are classified according to *medium* (print or electronic), *environment* (which only applies to digital texts, and includes authored and message-based environments) and *format* (continuous, non-continuous, mixed and multiple). Aspects are the cognitive skills that readers use in processing texts. They include *Access and Retrieve* (navigating a text to locate and retrieve a piece of explicitly-stated information), *Integrate and Interpret* (making internal sense of the text) and *Reflect and Evaluate* (relating information in the text to external knowledge and to the reader’s own conceptual and experiential frames of reference). A fourth aspect, *Complex*, refers to digital texts which make multiple processing demands on the reader.

Performance on PISA 2009 reading is reported in terms of overall performance on two scales: print reading and digital reading. Performance on print reading is also reported with reference to three *aspect* subscales – *Access and Retrieve*, *Integrate and Interpret*, and *Reflect and Evaluate*; and two *format* subscales – *Continuous* and *Non-continuous*.

Chapter 3: Sample PISA 2009 Reading Tasks

The purpose of this chapter is to familiarise readers with the types of tasks – both print and digital – used to assess students’ reading proficiency in PISA 2009. Tasks (questions) were reviewed by the OECD and their contractors after the 2009 main study in terms of their fit to the reading framework and the robustness of their measurement properties, with those showing the best fit being retained for future cycles of PISA. Of the remainder, a small number have been released into the public domain to illustrate the different aspects of the reading framework. This chapter draws on some of the released tasks together with student performance on them in order to give a flavour of the content and difficulty of the PISA reading assessment. For more examples of PISA print tasks, readers are referred to <https://www.pisa.oecd.org> (→ what PISA produces → test questions) and more examples from the digital reading assessment can be accessed at <http://erasq.acer.edu.au> (user name – public; password – access).

PISA uses Item Response Theory to convert test data into final test scores for each student. This ‘scaling’ process places students’ performance and item difficulty on the same underlying scales and makes it possible to compare across domains and over time. In the first cycle in which they enjoy the status of major domain, domains (e.g., reading) and subdomains are scaled to have an OECD mean of 500 and a **standard deviation** of 100, meaning that two-thirds of students’ scores fall between 400 and 600 points, and around 95% of scores are between 300 and 700 points. Since reading literacy was a major domain for the first time in 2000, performance on reading literacy in 2009 is linked back to scales devised in 2000.

When the performance on individual questions is considered in this chapter, we make reference to their difficulty in terms of PISA proficiency levels. These are discussed further in Chapters 4 and 5. Below is a summary of how the proficiency levels ‘map onto’ PISA scores:

- *Level 5 and above:* 626 PISA points or higher
- *Level 4:* 553 to 625 PISA points
- *Level 3:* 480 to 552 PISA points
- *Level 2:* 407 to 479 PISA points
- *Level 1 or below (including 1a and 1b):* 406 PISA points or lower.

The digital reading assessment gathered information not only on students’ performance on each question, but also on their behaviour during the test, i.e., the number of pages that they navigated to in order to answer a question, and whether these pages contained information that was relevant to finding the answer or not. In discussing the digital reading questions in this chapter, we make reference to students’ navigation behaviour where relevant.

Examples of Print Reading Units

While some of the print units (texts and tasks) used in PISA 2009 were drawn from PISA 2000, others were used in 2009 for the first time and two of these are reviewed here: *The Play’s the Thing* and *Telecommuting*.

The Play's the Thing

The Play's the Thing is the beginning of a play by the Hungarian dramatist Ferenc Molnár. The stimulus is shown below. In line with the reading framework described in Chapter 2, for each question, the text format is described as continuous, the text type as narration, and the situation of the text as personal.

Takes place in a castle by the beach in Italy

FIRST ACT

Ornate guest room in a very nice beachside castle. Doors on the right and left. Sitting room set in the middle of the stage: couch, table, and two armchairs. Large windows at the back. Starry night. It is dark on the stage. When the curtain goes up we hear men conversing loudly behind the door on the left. The door opens and three tuxedoed gentlemen enter. One turns the light on immediately. They walk to the centre in silence and stand around the table. They sit down together, Gál in the armchair to the left, Turai in the one on the right, Ádám on the couch in the middle. Very long, almost awkward silence. Comfortable stretches. Silence. Then:

GÁL

Why are you so deep in thought?

TURAI

I'm thinking about how difficult it is to begin a play. To introduce all the principal characters in the beginning, when it all starts.

ÁDÁM

I suppose it must be hard.

TURAI

It is – devilishly hard. The play starts. The audience goes quiet. The actors enter the stage and the torment begins. It's an eternity, sometimes as much as a quarter of an hour before the audience finds out who's who and what they are all up to.

GÁL

Quite a peculiar brain you've got. Can't you forget your profession for a single minute?

TURAI

That cannot be done.

GÁL

Not half an hour passes without you discussing theatre, actors, plays. There are other things in this world.

TURAI

There aren't. I am a dramatist. That is my curse.

GÁL

You shouldn't become such a slave to your profession.

TURAI

If you do not master it, you are its slave. There is no middle ground. Trust me, it's no joke starting a play well. It is one of the toughest problems of stage mechanics. Introducing your characters promptly. Let's look at this scene here, the three of us. Three gentlemen in tuxedos. Say they enter not this room in this lordly castle, but rather a stage, just when a play begins. They would have to chat about a whole lot of uninteresting topics until it came out who we are. Wouldn't it be much easier to start all this by standing up and introducing ourselves? *Stands up.* Good evening. The three of us are guests in this castle. We have just arrived from the dining room where we had an excellent dinner and drank two bottles of champagne. My name is Sándor Turai, I'm a playwright, I've been writing plays for thirty years, that's my profession. Full stop. Your turn.

GÁL

Stands up. My name is Gál, I'm also a playwright. I write plays as well, all of them in the company of this gentleman here. We are a famous playwright duo. All playbills of good comedies and operettas read: written by Gál and Turai. Naturally, this is my profession as well.

GÁL and TURAI

Together. And this young man ...

ÁDÁM

Stands up. This young man is, if you allow me, Albert Ádám, twenty-five years old, composer. I wrote the music for these kind gentlemen for their latest operetta. This is my first work for the stage. These two elderly angels have discovered me and now, with their help, I'd like to become famous. They got me invited to this castle. They got my dress-coat and tuxedo made. In other words, I am poor and unknown, for now. Other than that I'm an orphan and my grandmother raised me. My

grandmother has passed away. I am all alone in this world. I have no name, I have no money.

TURAI

But you are young.

GÁL

And gifted.

ÁDÁM

And I am in love with the soloist.

TURAI

You shouldn't have added that. Everyone in the audience would figure that out anyway.

They all sit down.

TURAI

Now wouldn't this be the easiest way to start a play?

GÁL

If we were allowed to do this, it would be easy to write plays.

TURAI

Trust me, it's not that hard. Just think of this whole thing as ...

GÁL

All right, all right, all right, just don't start talking about the theatre again. I'm fed up with it. We'll talk tomorrow, if you wish.

The Play's the Thing – Question P1

What were the characters in the play doing just before the curtain went up?

Examples of correct answers:

Eating their dinner.

The characters were behind the door on the left coming back from dinner.

Examples of incorrect answers:

Talking about boring topics

They are in their positions for the play.

They were conversing loudly behind the door to the left.

	Ireland	OECD	Item Difficulty
Correct	11.3%	13.3%	Scale Score: 730 Proficiency Level 6
Incorrect	81.1%	75.0%	
Missing	7.6%	11.7%	

Situation: *Personal*

Text Format: *Continuous*

Text type: *Narrative*

Aspect: *Integrate and Interpret – develop an interpretation*

Question Format: *Short response*

Question P1 is one of the most difficult in PISA 2009. Just 11% of students in Ireland (8% of males, 14% of females) and 13% across OECD countries produced a correct answer. In Ireland, 8% of students skipped the question, while 12% did so on average across OECD countries. The difficulty score associated with this item – 730 – is on the same scale as the country mean scores. An OECD-wide difficulty value of 730 for this question is substantially above the average score on the test (493), again indicating its high level of difficulty. The proficiency level associated with a difficulty score of 730 is Level 6 (the highest proficiency level).

This means that the highest-performing students taking PISA (those scoring at Level 6) have about a 62% chance⁵ of answering the question correctly, and students at lower proficiency levels have less chance of providing a correct answer.

⁵ PISA proficiency levels are developed in such a way that the probability of a student at a particular point on the scale responding correctly to an item at that point is 0.62, or 62%.

Question P1 may be difficult for a number of reasons. First, relatively little context is provided – students are merely told that the excerpt is from the beginning of a play by a Hungarian playwright. The reader needs to make a distinction between characters and actors. The question refers to what the characters were doing before the curtain went up. It requires readers to make a distinction between the real world of the actors and the imaginary world of the characters Gál, Turai and Ádám, who were ‘conversing loudly behind the door on the left’, which readers can subsequently deduce is a dining room, just before they entered the sitting room (stage). According to the OECD (2010a), ‘a question that assesses students’ capacity to distinguish between the real and fictional worlds seems particularly appropriate in relation to a text whose theme is about just that, so that the complexity of the question is aligned to the theme of the text’ (p. 108).

Finally, the location of the information required to answer the question is likely to have contributed to its difficulty. While one might expect to find information required to answer a question about what happened before the curtain went up at the beginning of the text, in fact the information is actually found about half way through the excerpt.

The Play’s the Thing – Question P2

‘It’s an eternity, sometimes as much as a quarter of an hour’ (lines 28-29).
According to Turai, why is a quarter of an hour an eternity?

- A. It’s a long time to expect an audience to sit still in a crowded theatre.
- B. It seems to take forever for the situation to be clarified at the beginning of the play.
- C. It always seems to take a long time for a dramatist to write the beginning of a play.
- D. It seems that time moves slowly when a significant event is happening in a play.

	Ireland	OECD	Item Difficulty
Correct (Option B)	61.7%	66.3%	Scale Score: 474 Proficiency Level 2
Incorrect	35.7%	30.0%	
Missing	2.6%	3.6%	

Situation: *Personal*

Text Format: *Continuous*

Text type: *Narration*

Aspect: *Integrate and Interpret – develop an interpretation*

In Ireland, 62% of students (55% of males, 68% of females) identified the correct answer (B) to Question P2 from among four possibilities, compared with an OECD average of 66%. The item is relatively easy, having an OECD-wide difficulty value of 474. This is below the average score on the test (493), and is at proficiency Level 2 (though it is close to Level 3). Fewer students in Ireland (3%) and on average across OECD countries (4%) skipped this item, compared with the previous question. This may be related to the fact that the item is easier and that it follows a multiple choice format rather than requiring a written response.

Although also classified as Integrate and Interpret, Question P2 is easier than the previous one because students are directed to the location of the relevant information in the text (lines 28-29). Nevertheless, the reader must relate (connect) the statement, ‘It’s an eternity. . .’ to what happens in the remainder of the text – the actors go through the process of introducing the characters directly at a hypothetical beginning of a play.

The Play's the Thing – Question P3

Overall, what is the dramatist Molnár doing in this extract?

- A. He is showing the way that each character will solve his own problems.
- B. He is making his characters demonstrate what an eternity in a play is like.
- C. He is giving an example of a typical and traditional opening scene for a play.
- D. He is using the characters to act out one of his own creative problems.

	Ireland	OECD	Item Difficulty
Correct (option D)	46.4%	46.2%	Scale Score: 556 Proficiency Level 4
Incorrect	47.7%	47.7%	
Missing	5.8%	6.1%	

Situation: *Personal*

Text Format: *Continuous*

Text type: *Narration*

Aspect: *Integrate and interpret – develop a broad understanding*

Question format: *Multiple choice*

Question P3 is a more difficult multiple-choice item than the previous one, with just 46% of students in Ireland and on average across OECD countries identifying the correct answer (D). In Ireland, 41% of male students and 51% of female students answered correctly. The item is at Level 4 on the PISA proficiency scale. Here, the reader is required to take a global perspective to form a broad understanding by integrating and interpreting the implications of the dialogue across the text, where, according to the OECD (2010a), ‘the theme is literary and abstract’ (p. 109).

Telecommuting

Telecommuting comprises a relatively short text, and consists of two short passages that were generated independently, but combined for the purposes of the assessment. Since the purpose of both passages is to persuade readers to a point of view, the text type is classified as argumentation. The situation of the text is occupational.

The way of the future

Just imagine how wonderful it would be to “telecommute”¹ to work on the electronic highway, with all your work done on a computer or by phone! No longer would you have to jam your body into crowded buses or trains or waste hours and hours travelling to and from work. You could work wherever you want to – just think of all the job opportunities this would open up! – *Molly*

Disaster in the making

Cutting down on commuting hours and reducing the energy consumption involved is obviously a good idea. But such a goal should be accomplished by improving public transportation or by ensuring that workplaces are located near where people live. The ambitious idea that telecommuting should be part of everyone’s way of life will only lead people to become more and more self-absorbed. Do we really want our sense of being part of a community to deteriorate even further? – *Richard*

¹ “Telecommuting” is a term coined by Jack Nilles in the early 1970s to describe a situation in which workers work on a computer away from a central office (for example, at home) and transmit data and documents to the central office via telephone lines.

Telecommuting – Question T1

What is the relationship between “The way of the future” and “Disaster in the making”?

- A. They use different arguments to reach the same general conclusion.
- B. They are written in the same style but they are about completely different topics.
- C. They express the same general point of view, but arrive at different conclusions.
- D. They express opposing points of view on the same topic.

	Ireland	OECD	Item Difficulty
Correct (option D)	52.1%	52.3%	Scale Score: 537 Proficiency Level 3
Incorrect	44.8%	44.3%	
Missing	3.1%	3.5%	

Situation: *Occupational*

Text Format: *Multiple*

Text type: *Argumentation*

Aspect: *Integrate and interpret – develop a broad understanding*

Question format: *Multiple choice*

Question T1 is in the mid-range of difficulty (537 points, or Level 3). In Ireland and on average across OECD countries, just over one-half of students (52%) identified answer D as being correct. In Ireland, 49% of males and 55% of females selected this answer. Interestingly, 28% of students in Ireland and 29% across OECD countries selected option C.

The question requires students to recognise the relationship between the two texts – that is, that they express contrasting points of view about the same topic. A contributing difficulty may be the differing styles of the two texts. In the first, the author suggests early that it would be wonderful to telecommute to work. In contrast, in the second, the author does not set out a similarly unequivocal position. Instead, the text is a set of responses to the first author, and, as such, may require a greater level of interpretation on the part of the reader. Students selecting option C incorrectly infer that the two texts express the same general point of view.

In Ireland, 47% of students provided a correct answer to Question T2 (see next page), while 56% of students did so on average across OECD countries. In Ireland, 49% of male students and 46% of female students answered correctly, making this one of the few items in which males performed at about the same level as females. The item has a difficulty score of 514, which places it at Level 3 on the PISA reading proficiency scale.

To answer this item correctly, students may need to link their understanding of the text, including the meaning of telecommuting (as outlined in the footnote to the text, if they were not familiar with it already), to their background or prior knowledge, as no examples of professions are given in the text.

Telecommuting – Question T2

What is one kind of work for which it would be difficult to telecommute? Give a reason for your answer.

Examples of correct answers (full credit only):

Electrician. It's a practical job and can't be done on a computer.

Teaching, as you could not keep control of the class.

Farming. It is usually done in the countryside. There would be no demand for telecommuting in the countryside.

Examples of incorrect answers:

It would be difficult for people who aren't interested.

Practical work (no example provided)

	Ireland	OECD	Item Difficulty
Correct	47.1%	56.2%	Scale Score: 514 Proficiency Level 3
Incorrect	37.4%	28.9%	
Missing	15.5%	15.0%	

Situation: *Occupational*

Text Format: *Continuous*

Text type: *Argumentation*

Aspect: *Reflect and evaluate – Reflect on and evaluate the content of a text*

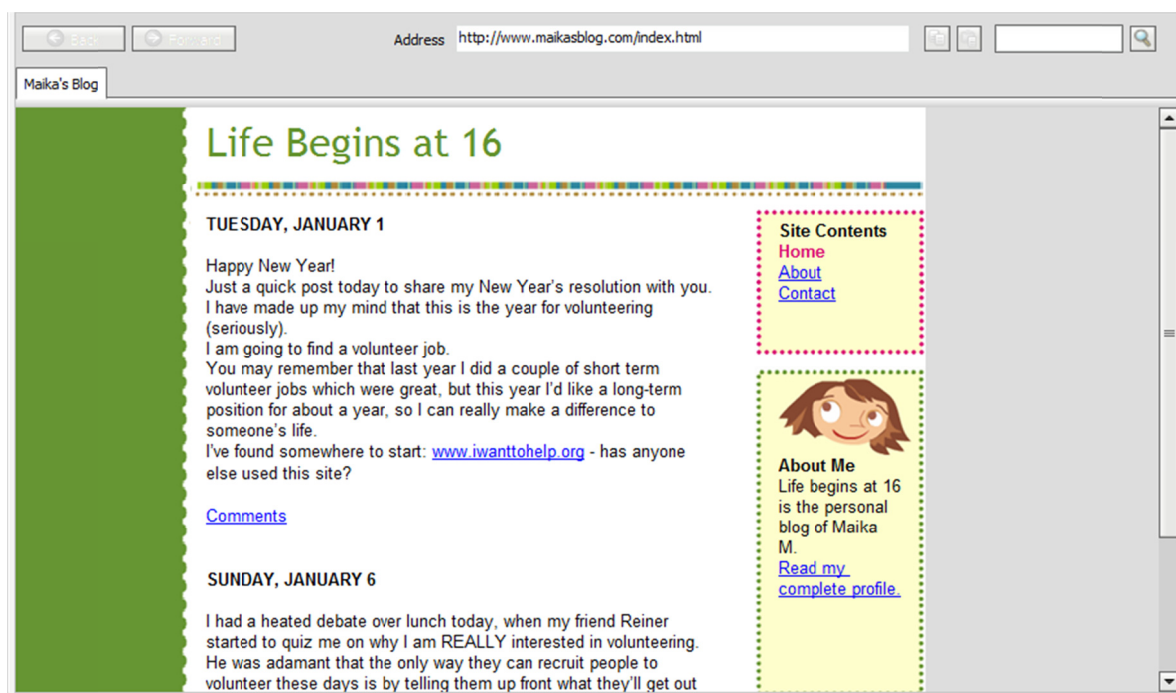
Question format: *Open constructed response*

Example of a Digital Reading Unit

A limited number of digital reading units used in the PISA 2009 digital reading literacy assessment were also released along with the print reading items. One such unit (IWANTTOHELP), which is based on a student's blog, is presented below.

IWANTTOHELP

In the first part of the IWANTTOHELP unit students are presented with the home page of the blog of a girl called Maika (see the next page).



IWANTTOHELP: Question I1

Read Maika's blog entry for January 1. What does the entry say about Maika's experience of volunteering?

- A. She has been a volunteer for many years.
- B. She only volunteers in order to be with her friends.
- C. She has done a little volunteering but would like to do more.
- D. She has tried volunteering but does not think it is worthwhile.

	Ireland	OECD	Item difficulty
Correct (option C)	88.6%	84.6%	Scale score: 362
Incorrect	9.7%	13.8%	Below proficiency level
Missing	1.7%	1.6%	2

Situation: *Occupational*

Environment: *Message-based*

Text Format: *Continuous*

Text type: *Description*

Aspect: *Access and retrieve – retrieve information*

Question Format: *Multiple choice*

The instructions in Question I1 direct students to the first entry in the blog from Tuesday, January 1. Students are required to read only this page in order to answer the question and the relevant information can be located without scrolling. This is a relatively easy item, with almost 89% of students in Ireland answering correctly (compared to 85% on average across the OECD) and is an example of an item at below Proficiency Level 2. Across all countries, students who answered this question correctly received an overall scale score of 518, compared to 376 for students who answered this question incorrectly. Both boys and girls in Ireland performed well on this item, with 81% of boys and 89% of girls answering it correctly.

The home page that is presented to students contains a number of links to additional pages that are not relevant to this question. Overall, most students (84%) did not navigate away from the starting page. These students received a slightly higher mean score (496) than students who visited two or more pages (488). Among students who answered this question correctly, there is a pattern that, as the number of pages visited increases, the mean ability of the student diminishes. For example, the 71% of students who answered this question correctly and viewed only the starting page achieved an average score of 519, compared to 478 for students who answered this question correctly but visited six or more pages.

IWANTTOHELP: Question I2

Go to Maika's "About" page.

What kind of work does Maika want to do when she leaves school?

- A. Photography.
- B. Web design.
- C. Banking.
- D. Social work.

	Ireland	OECD	Item difficulty
Correct (option B)	75.9%	78.4%	Scale score: 417 Proficiency level 2
Incorrect	22.5%	19.7%	
Missing	1.6%	1.9%	

Situation: *Educational*

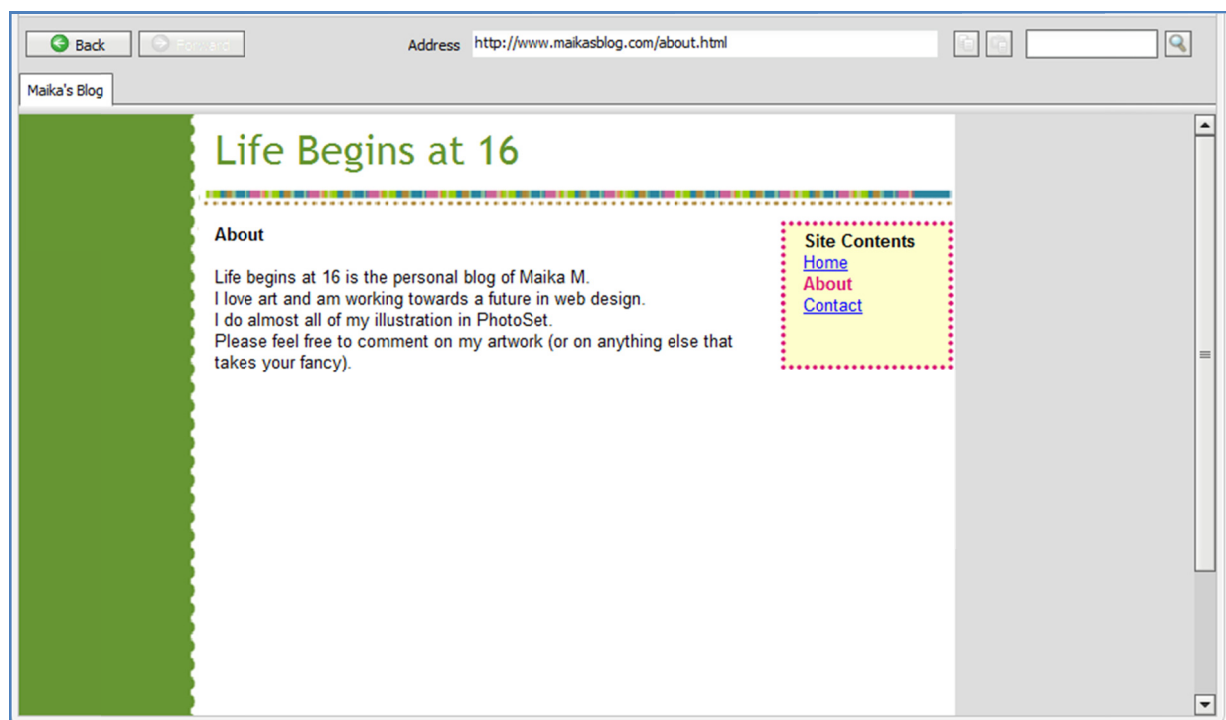
Environment: *Message-based*

Text Format: *Multiple*

Text type: *Description*

Aspect: *Access and retrieve – retrieve information*

Question Format: *Multiple choice*



Question I2 (above) starts on the home page of the blog but requires students to navigate away from this page to Maika’s “About” page (see previous page). Although there are a number of links available on the home page, finding the correct link is easy as there is a literal match between the term in the task and the name of the link. Once students find the relevant page they then need to read a very short piece of text to extract the information required to answer the question.

This is a relatively easy item with just over 78% of students across OECD countries answering correctly; however, slightly fewer students in Ireland (76%) received credit for this item. Almost 80% of students visited the page necessary to answer the question and, of these students, almost 90% received credit. Of the students who did not receive credit for this question, 67% did not visit the relevant page. A small minority of students (4%) did not visit the relevant page yet gained credit for this question. These students tended to perform poorly overall (receiving an average score of 388), suggesting that they guessed the answer and did not remember it from Question I1. Boys (5%) were slightly more likely than girls (3%) to guess.

Of the students who answered this question correctly, those who visited only the relevant page received a substantially higher average overall score (532) than those who visited more than two pages (512), indicating that additional exploration for this task is not associated with higher performance.

IWANTTOHELP: Question 13:

Read Maika’s blog for January 1. Go to the [iwanttohelp](#) site and find an opportunity for Maika. Use the email button on the “Opportunity Details” page for this opportunity to tell Maika about it. Explain in the email why the opportunity is suitable for her. Then send your email by clicking on the “Send” button.

	Ireland	OECD	Scale score	Proficiency level
Full credit	49.0%	44.1%	567	4
Partial credit	14.9%	13.8%	525	3
Incorrect	3.5%	4.7%	–	–
Missing	32.6%	37.4%	–	–

Situation: *Educational*

Environment: *Message-based*

Text Format: *Multiple*

Text type: *Description*

Aspect: *Access and retrieve – retrieve information*

Question Format: *Multiple choice*

Question I3 requires substantially more navigation than the previous two, and this may account for the much higher missing rate for this item. Students are presented with the home page, as in Questions I1 and I2, and are directed to read the blog entry for January 1. They are then directed to click on the link in this blog entry which brings them to the [iwanttohelp](#) site. In order to find an opportunity for Maika, students need to find their way to the “Latest Opportunities” page, shown on the next page.

What is Opportunity?
Join the hundreds of volunteers who use the iwanttohelp network every year to find an opportunity that suits them. Click on the links to see details of each opportunity for volunteers.

What is Location?
Location is the geographic area in which an organisation is recruiting. Each opportunity needs volunteers from a specific city, county, state, or is recruiting nationally.

What is Date?
The date range shows the period when a non-profit

Opportunity	Organisation	Location	Date	Great For
Graphic Artist	Federation of Galaxy Explorers	Online	On-going	Teens, Seniors
Vegfest - a healthy vegetarian food festival	Vegetarians United	Horizon Exhibition Centre	12 to 14 September	Teens, Groups, Seniors
Help fix up Twin Falls Track	Team Green	Twin Falls Track	27 September to 3 October	Teens, Groups
Upway Primary	Big Brothers, Big Sisters	Upway Primary	On-going	Teens, Seniors

Students must use the scroll bar to see the whole of this page. This page offers four opportunities. Students may click on each opportunity to obtain more information to allow them to evaluate which one would be most suitable for Maika. The page for Upway Primary School is presented below.

Find a Volunteer Opportunity
Join the hundreds of volunteers who use the iwanttohelp network every year to find an opportunity that suits them. Search for an opportunity now! [Latest Opportunities](#)

Opportunity Details
Upway Primary School - Work with kids

Organisation: Big Brothers, Big Sisters
Date: On-going
Estimated Time: 1 hour per week
Location: Upway Primary School
Interest Area: Children and Youth, Community, Education and Literacy

Description
The School-Based Mentoring Programme is an innovative approach created by Big Brothers, Big Sisters to reach a more diverse population of children. The programme is designed to foster the academic development of young people, as well as to improve social skills. The volunteer meets with the student on the school campus, once a week, for one hour, during school hours, for a minimum of one year. It is our

Again, students must scroll to see the whole page. Although the text is fairly short, it is relatively dense and the vocabulary is somewhat complex. Students need to compare the descriptions of the opportunities to the criteria outlined on Maika's blog, which can be accessed by clicking on the tab in the top left corner. Once students have decided which opportunity best suits Maika, they need to click on the "E-mail opportunity to a friend" link and construct a message to Maika, including an explanation as to why the opportunity is suitable for her (see the e-mail page overleaf).

The screenshot shows a web browser window with the address <http://www.iwanttohelp.org/latest-opportunities/school-e-mail.html>. The page features the iwanttohelp.org logo and navigation links: Home, Latest Opportunities, Resources, and Site Map. A sidebar on the left contains a 'Did You Know?' section about the organization. The main content area is titled 'E-mail this Opportunity to a Friend!' and highlights the 'Upway Primary School - Work with kids' opportunity. Below this, there is a form with three fields: 'E-mail address:' (pre-filled with maika@pisaweb.org), 'Subject:' (pre-filled with 'Check out this volunteer opportunity!'), and 'Message:' (pre-filled with 'Thought you'd be interested in this volunteer opportunity because...'). A 'Send' button is located at the bottom of the form.

There are two suitable opportunities (Upway Primary School and Graphic Artist) and students receive full credit for selecting either one, and providing a relevant explanation for their choice. Almost half of students in Ireland (49%) received full credit for this item, while 15% received partial credit. This compares to an OECD average of 44% and 14%, respectively. The number of students giving no response to this item was especially high (37% across OECD countries and 33% in Ireland) which may be due in part to the fact that this task required a lot of time to complete (an average of slightly over three minutes).

Although students who received full credit for this item visited a similar number of pages to those receiving partial credit and no credit, students who performed better on this task tended to visit more relevant pages and fewer irrelevant pages. For example, students receiving full credit visited an average of 7.5 relevant pages compared to 4.6 relevant page visits for students who did not receive any credit. On the other hand, the average number of irrelevant page visits for students receiving full credit was 0.8 while students receiving no credit visited an average of 3.7 irrelevant pages.

Chapter Highlights

This chapter examined the content and responses of students to eight example tasks from the PISA 2009 assessment – five from the print assessment and three from the digital assessment.

Further examples of print tasks from PISA are available at www.pisa.oecd.org and digital tasks can be accessed at <http://erasq.acer.edu.au> (username – public; password – access). These can be of interest to teachers wishing to use PISA materials in class for instructional or assessment purposes.

The tasks examined were described in terms of their location on the PISA assessment framework, the percentage of correct and missing responses (Ireland and the OECD), and the relative difficulty of each question in terms of PISA score points and PISA proficiency levels.

Questions with a higher percent-correct tended to be easier multiple-choice items, while more difficult questions, requiring a written response, tended to have a lower percent correct and a higher rate of missing responses.

In general, girls tended to do better than boys on the sample questions.

Chapter 4: Performance on Print Reading

This chapter describes the performance of students in Ireland on the PISA 2009 print reading assessment and on the five reading subscales. It also describes performance on the PISA reading proficiency scale and examines gender differences in reading performance. Changes in reading performance among students in Ireland over time are considered and possible explanations for these changes will be put forward.

Overall Performance on Print Reading

Students in Ireland achieved a mean score of 496 which is above but not **significantly different** from the OECD average of 493 (Table 4.1). Eleven countries had significantly higher performance than Ireland (marked ▲ in Table 4.1), while Ireland's mean did not differ significantly from those of 15 countries (marked ○ in Table 4.1). Thirty-eight countries (including twelve OECD countries) had mean scores significantly below Ireland's (marked ▼ in the table).

Table 4.1: Mean Country Scores and Ranks for Print Reading Scales

Above OECD Average			Not Significantly Different from OECD average			Below OECD Average		
	Mean	IRL		Mean	IRL		Mean	IRL
<i>Shanghai-China</i>	556	▲	United States	500	○	<i>Macao-China</i>	486.6	▼
Korea	539	▲	Sweden	497	○	Italy	486.1	▼
Finland	536	▲	Germany	497	○	<i>Latvia</i>	484.0	▼
<i>Hong Kong-China</i>	533	▲	Ireland	496		Slovenia	483.1	▼
<i>Singapore</i>	526	▲	France	496	○	Greece	482.8	▼
Canada	524	▲	<i>Chinese Taipei</i>	495	○	Spain	481.0	▼
New Zealand	521	▲	Denmark	495	○	Czech Republic	478.2	▼
Japan	520	▲	United Kingdom	494	○	Slovak Republic	477.4	▼
Australia	515	▲	Hungary	494	○	<i>Croatia</i>	475.7	▼
Netherlands	508	▲	Portugal	489	○	Israel	474.0	▼
Belgium	506	▲				Luxembourg	472.2	▼
Norway	503	○				Austria	470.3	▼
Estonia	501	○				<i>Lithuania</i>	468.4	▼
Switzerland	501	○				Turkey	464.2	▼
Poland	500	○				<i>Dubai (UAE)</i>	459.4	▼
Iceland	500	○						
<i>Liechtenstein</i>	499	○						
						+ 23 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

Performance on the Reading Subscales

As described in Chapter 2, five reading subscales were formed based on three reading aspects (Access and Retrieve, Integrate and Interpret, and Reflect and Evaluate) and two text formats (Continuous and Non-continuous). Students in Ireland performed best on the Reflect and Evaluate subscale (502), achieving a mean score that was significantly above the OECD average (495). Ireland's performance on the Access and Retrieve (498), Integrate and Interpret (494), Continuous (497) and Non-continuous (496) scales was slightly above, but not significantly different from, the corresponding OECD averages (495, 493, 494 and 493, respectively).

Performance on Print 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. For print reading in 2009, seven proficiency levels are described: Level 1b is the lowest level measured by PISA, followed by Level 1a, then Level 2 and so on up to Level 6. The performance of students who did not demonstrate the skills necessary to answer the easiest PISA print reading items is categorised as being below Level 1b.

Table 4.2: Proficiency Levels on the PISA 2009 Print Reading Scale, and Percentages of Students Achieving Each Level (Ireland and OECD Average)

Level (Score range)	Students at this level are capable of:	OECD	Ireland
6 (above 708)	Conducting fine-grained analysis of texts; understanding both explicit and implicit information; reflecting on and evaluating texts; integrating information from more than one text; dealing with both familiar and unfamiliar content areas presented in typical as well as atypical formats; hypothesising about or critically evaluating a complex text taking into account multiple criteria or perspectives and applying sophisticated understandings from beyond the text. These students are highly skilled readers.	1%	1%
5 (626 to 707)	Locating and organising deeply embedded information within texts; inferring which information in the text is relevant; critically evaluating or hypothesising about texts; drawing on specialised knowledge and dealing with concepts that are contrary to expectations.	7%	6%
4 (553 to 625)	Locating and organising embedded information; interpreting the meaning of nuances of language in a section of text by taking into account the text as a whole; understanding and applying categories in an unfamiliar context; using formal or public knowledge to hypothesise about or critically evaluate a text and understanding long or complex texts whose content or form may be unfamiliar.	21%	22%
3 (480 to 552)	Locating multiple pieces of information, making links between different parts of a text and relating text content to familiar everyday knowledge. Tasks at this level are among those that might be expected to be commonly demanded of young and older adults across OECD countries in their everyday lives.	29%	31%
2 (407 to 479)	Locating information that meets several conditions, making comparisons or contrasts around a single feature, working out what a well-defined part of a text means even when the information is not prominent, and making connections between the text and personal experience. Level 2 can be considered the basic level of proficiency needed to participate effectively and productively in society and future learning.	24%	23%
1a (335 to 406)	Locating one or more independent pieces of explicitly stated information; recognising the main theme or idea in a text about a familiar topic and making simple connections between information in the text and common, everyday knowledge.	13%	12%
1b (262 to 334)	Locating a single piece of explicitly stated information in short, simple texts with a familiar style and content, such as a narrative or a simple list; making simple connections between adjacent pieces of information. The text typically provides support to the reader (e.g. repetition of information, pictures or familiar symbols) and there is minimal competing information.	5%	4%
Below Level 1b (below 262)	There is insufficient information on which to base a description of the reading skills of these students.	1%	2%

Source: OECD, 2010b.

Ireland has about the same proportion of highly skilled readers (students at or above Level 5) as is found on average in countries across the OECD (7% versus 8%, respectively)(see Table 4.2). About 18% of students in Ireland (compared to an OECD average of almost 19%) are performing 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.

This percentage is considerably higher than the corresponding percentages in high-achieving countries such as Finland (8%) and Canada (10%) but is slightly lower than in the United Kingdom (18%) and Germany (19%), who have similar overall print reading performance to Ireland.

Gender Differences in Print Reading

Female students performed significantly better than males in all participating countries. In Ireland, female students achieved a mean score (515) that is 39 points higher than male students (476), the same as the average gender difference among OECD countries. The mean scores for females and males in Ireland did not differ significantly from the corresponding average scores across OECD countries (513 and 474, respectively).

Twenty-three percent of male students in Ireland, compared to 11% of female students achieved a mean score which is below the level deemed to be required to participate effectively in society and future learning (i.e., below Level 2). On the other hand, 10% of females in Ireland are considered highly skilled readers (Level 5 or above), compared to just 5% of males.

In Ireland, females significantly outperform males on each of the reading subscales (Table 4.3).

Table 4.3: Mean Scores for Males and Females on the Five Reading Subscales (Ireland and OECD Average)

	Ireland		OECD	
	Males	Females	Males	Females
Access and Retrieve	476	521	475	515
Integrate and Interpret	476	512	476	512
Reflect and Evaluate	484	522	472	517
Continuous	476	517	473	515
Non-Continuous	477	516	475	511

Changes in Print Reading Performance over Time

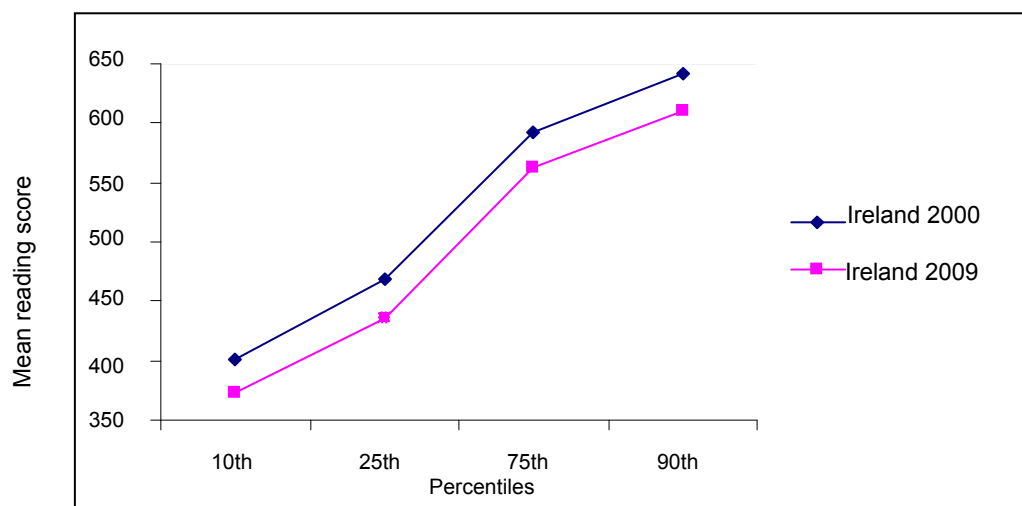
Print reading in 2009 is compared to reading in 2000, the last time that reading was assessed as a major domain in PISA. Ireland's performance in reading dropped by 31 points since 2000, the largest decline among all countries that have valid data for both cycles. In 2000, Ireland's mean score (527) was significantly above the average across OECD countries; however, in 2009 it did not differ significantly from the OECD average. Also, Ireland's rank has changed from 5th to 17th among the 38 countries that have data available for both cycles. Other countries which saw significant declines in their mean reading scores include Sweden (-19) and Australia (-14), while Poland (+21), Portugal (+19) and Germany (+13) saw significant improvements since 2000.

The percentage of high-achieving students (Level 5 and above) in Ireland has halved, from 14% to 7%, since 2000. While Ireland had significantly more high-achieving students than on average across the OECD in 2000 (9%), the percentage of such students in 2009 is not significantly different from the corresponding OECD average (8%). There has also been a significant increase in the proportion of students in Ireland who are achieving below Level 2 (from 11% in 2000 to 17% in 2009), meaning that the country has changed from being well below the corresponding OECD average in 2000 to being not significantly different from it in 2009 (the average percentage of such students across the OECD was 19% in both 2000 and

2009). In Ireland, this increase has been more marked in male students (from 14% to 23%) than in females (from 8% to 11%).

The drop in Ireland's performance between 2000 and 2009 was uniform across each of several key percentile points, as can be seen in Figure 4.1.

Figure 4.1: Performance at Key Percentiles on the Combined Reading Literacy scale (Ireland 2000 and 2009)



The average performance of both male and female students dropped significantly since 2000, although the drop was greater for males (-37 points) than for females (-26 points). This means that the difference between males and females in Ireland has increased from 29 points to 39 points (in favour of females) and is now the same as the average difference across OECD countries.

Understanding the Changes in Print Reading Since PISA 2000

The results of the print assessment of reading literacy in 2009 show a significant decrease of 31 points in the mean score for Ireland since 2000. This drop in achievement gave rise to considerable debate in the media and among partners in education in Ireland, and was the subject of debate by the Joint Oireachtas Committee on Education and Skills in January 2011 (<http://debates.oireachtas.ie/EDJ/2011/01/13/00004.asp>).

It is likely that Ireland's decline is due to a combination of factors including changes in the school-going population, survey fatigue and disengagement, random sampling fluctuations and the linking and scaling methodology used in PISA (see Cosgrove, Shiel, Archer & Perkins (2010) and LaRoche and Cartwright (2010) for detailed treatment of the issues discussed in this section). Understanding the changes in achievement since PISA 2000 is an area still under investigation and analysis, and the changes will be examined in more detail in the forthcoming full PISA 2009 national report, to be published in early 2012. Here, a broad overview of some of the factors that might explain the changes is given.

Changes in the School-Going Population

There have been significant demographic changes in the school-going population in Ireland since 2000. For example, the percentage of immigrant students has increased from just over 2% to just over 8%, while the percentage of students who speak a language other than English or Irish has also increased, from almost 1% to 3.6% (see Chapter 6 for more details). There has also been a reversal in the direction of the relationship between achievement and immigrant status and between achievement and the language mainly spoken at home. In

2000, immigrant and ‘other language’ students had higher mean scores than native students, while in 2009 these students did significantly less well than native students (Cosgrove et al., 2010).

Also, the percentage of students leaving school early (i.e., before they reached the PISA target age) has decreased from just over 2% to 1.5% since 2000. As students who are at risk of leaving school early tend to be lower achievers, higher retention of such students could contribute to some of the decline observed in the Irish mean score. In addition, greater inclusion of students with special educational needs (SEN) in mainstream classes is likely to have increased the proportion of SEN students taking the PISA assessment. However, as estimates of the percentage of SEN students who participated in PISA in 2000 are not available, it is difficult to quantify the effect of such an increase on the PISA results (Cosgrove et al., 2010).

Changes in the way 15-year-old students were distributed in post-primary schools since 2000 may also have impacted on student scores. The percentage of students in Transition Year has increased from 16% to 24% (with a corresponding decrease in the percentage of students in Fifth Year) which is likely to be due to the greater availability of Transition Year in schools since 2000. The relatively large decline in reading scores among Fifth Year students may be due to a shift of more able students from Fifth Year to Transition Year.

It should, however, be noted that the changes in the school-going population described account for some, but not all, of the decline observed in the print reading scores for Ireland.

Survey Fatigue and Disengagement

Recent research (e.g., Eklöf, 2007; Boe, May & Boruch, 2002) has provided some evidence that variations in student engagement and fatigue levels during low-stakes testing situations (e.g., PISA, where the results have no individual consequences) can impact on the results; in other words, these factors can be confounded with estimates of student ability, though whether such effects are uniform across countries is unclear. One indirect indication of engagement is the extent to which students skip questions rather than attempt them (whether the attempt is correct or not). An analysis of missing responses of students in Ireland on PISA indicates that there has been an increase in skipping of reading questions between 2000 and 2009. Rates of skipping responses are higher for items requiring written responses than for multiple-choice items. The increase in Ireland is large compared to other countries and could be indicative of lower proficiency among students, lower motivation to engage with the assessment or some combination of these.

There is evidence to suggest that there was some disengagement from the PISA print reading test by students in Ireland. PISA uses a **rotated booklet design**, i.e., every student does not complete the same booklet. In fact, in PISA 2009, test items were spread across 13 booklets. Since PISA 2003, a balanced booklet design has also been used; each booklet is divided into quarters and tasks are repeated across booklets so that they appear once in each of the four quarters (once at the beginning of a booklet, once in the second quarter and so on). The purpose of this design is to account for the fact that students are likely to perform less well on items that appear towards the end of the booklet (due to tiredness or disengagement with the test). If we look at reading items that were common to 2003 and 2009 (see Cosgrove et al., 2010), we find that there is little difference in the performance of Irish students on these items when they appear at the beginning of the booklet, i.e., students in 2009 are as capable as students in 2003 at answering the items. However, when we compare student

performance on the same items when they appear at the end of a booklet there is a marked increase in the proportion of students in Ireland who do not answer the questions. This suggests that the decline in reading scores in Ireland may, at least in part, be accounted for by greater student disengagement with the assessment.

Random Sampling Fluctuation

In their independent review of the PISA 2009 results for Ireland, LaRoche and Cartwright (2010) concluded that the sampling of students and schools did not depart from the international quality assurance standards, and that they were representative of their respective populations in 2000 and 2009. However, this does not preclude the possibility of chance factors associated with sampling impacting on performance.

In PISA 2009, it was found that eight schools performed unexpectedly poorly relative to earlier PISA cycles. The mean score for these eight schools was over 100 points below the country mean. In previous PISA cycles, none of the sampled schools performed this poorly. Analysis of the Junior Certificate results for these schools confirms that their achievement was significantly lower compared with the other schools. Analysis of the samples indicates that the presence of these schools is not due to a systematic change in the sampling methodology but to random sampling fluctuation; however, it should be noted that these schools contained higher than average percentages of non-English speakers (Cosgrove et al., 2010).

Linking and Scaling Methodology Used

The comparison of print reading achievement between 2000 and 2009 is based on 26 common items; that is, items that were administered in all PISA cycles. In this way, performance on the 2009 scale was linked back to the 2006 scale, which had been linked back to the 2003 scale (in 2006). Finally, the 2003 scale had been linked back to the 2000 scale in 2003. Therefore the change in reading achievement in Ireland between 2000 and 2009 includes an 11 point drop that was observed between 2000 and 2003, which, on its own, was not statistically significant. The reasons for this drop are not fully understood; however, it is likely that extensive changes in the PISA booklet design between 2000 and 2003 were a contributing factor.

It can be argued that the model used for scaling student achievement data in 2009 under-represents student performance in Ireland. The model uses estimates of item difficulty to predict the probability that a student will answer a question correctly. However, actual performance of students in Ireland was better than that predicted by the model on 65% of items. It is unclear at this stage if this is also the case in other countries (LaRoche & Cartwright, 2010).

PISA is just one survey of educational achievement and its results should be considered in conjunction with evidence from other sources. It is important to note that we are unaware of corroborating evidence of large and significant declines in student achievement in post-primary schools over the past decade that are similar to those found by PISA. Nonetheless, the results should not give rise to complacency and may best be considered in the broader context of educational policy in Ireland (e.g., DES, 2011; NCCA, 2011).

Chapter Highlights

Ireland's mean reading literacy score in 2009 was 496 points, which is 31 points lower than in 2000. This decline is the largest across all countries that participated in PISA in both 2000 and 2009.

The mean score of students in Ireland was significantly above the OECD average in 2000 but is not significantly different from the OECD average in 2009.

In PISA 2009, students in Ireland performed best on the Reflect and Evaluate subscale, achieving a mean score that is significantly above the OECD average, while their performance on the other subscales was not significantly different from the corresponding OECD averages.

Ireland has about the same proportions of highly skilled and poorly performing readers as are found on average across OECD countries in 2009. The percentage of high-achieving students in Ireland has halved, from 14% to 7%, since 2000, while the proportion of poorer performing students has increased from 11% to 17% during this time.

Female students in Ireland achieved a mean score that is 39 points higher than the mean score for male students. While the performance of both male and female students dropped significantly since 2000, the drop was 11 points greater for males than for females.

The drop in Ireland's performance between 2000 and 2009 was uniform across the distribution of achievement.

The increase in the proportion of immigrant students and students whose first language is not English or Irish as well as the increase in SEN students in mainstream classes and greater retention of students is likely to account for some, but by no means all, of the decrease observed in the reading scores for Ireland since 2000.

There is evidence to suggest that students in Ireland were less motivated to engage with the PISA assessment in 2009 than in previous cycles and that the decline in reading scores in Ireland may be due in part to increased levels of student disengagement with the assessment.

Two other factors may have impacted in a negative way on the performance of students in Ireland. First, the PISA 2009 sample for Ireland included a number of schools that performed at a significantly lower level than the lowest-scoring schools in earlier PISA cycles, suggesting random sampling fluctuation. Second, there is some evidence that the approach to scaling used in PISA may have underestimated the performance of students in Ireland.

Possible reasons for the drop in performance between 2000 and 2009 are examined in greater detail in the full PISA 2009 national report, to be published in early 2012.

Chapter 5: Performance on Digital Reading

In PISA 2009 a subset of 19 countries, including Ireland, participated in a new component of PISA which assessed student proficiency in digital reading. This new assessment offers an opportunity to look at students' ability to respond to reading literacy tasks in a different context to the traditional paper-and-pencil test. Tasks in this assessment are presented in a simulated web-based environment (see Chapter 3 for examples) and emphasise skills such as skimming, locating and scanning large amounts of information, critically evaluating the credibility of the information presented, and communicating it to relevant others.

This chapter describes the performance of students in Ireland on digital reading and compares their performance to that on the print reading assessment (Chapter 4).

Overall Performance on Digital Reading

Students in Ireland achieved a mean digital reading score of 509 which is significantly above the average score across the 16 OECD countries that participated in the digital reading assessment (499) (Table 5.1). Of the 19 countries that were involved, Ireland's mean digital reading score is ranked 8th, and Ireland's OECD rank is 7th out of 16 countries.

Korea, New Zealand, Australia and Japan achieved mean digital reading scores that were significantly higher than the mean score for Ireland. These countries are not only the highest achieving countries for digital reading but are also among the highest performing countries on the print reading scale; therefore, it does not seem that Ireland's stronger performance on digital reading compared to print reading can be attributed to the absence of higher-performing print-reading countries from the assessment of digital reading. Ireland's mean digital reading score is not significantly different from those of Hong Kong-China, Iceland, Sweden or Belgium, but is significantly higher than the mean scores of the remaining 10 countries.

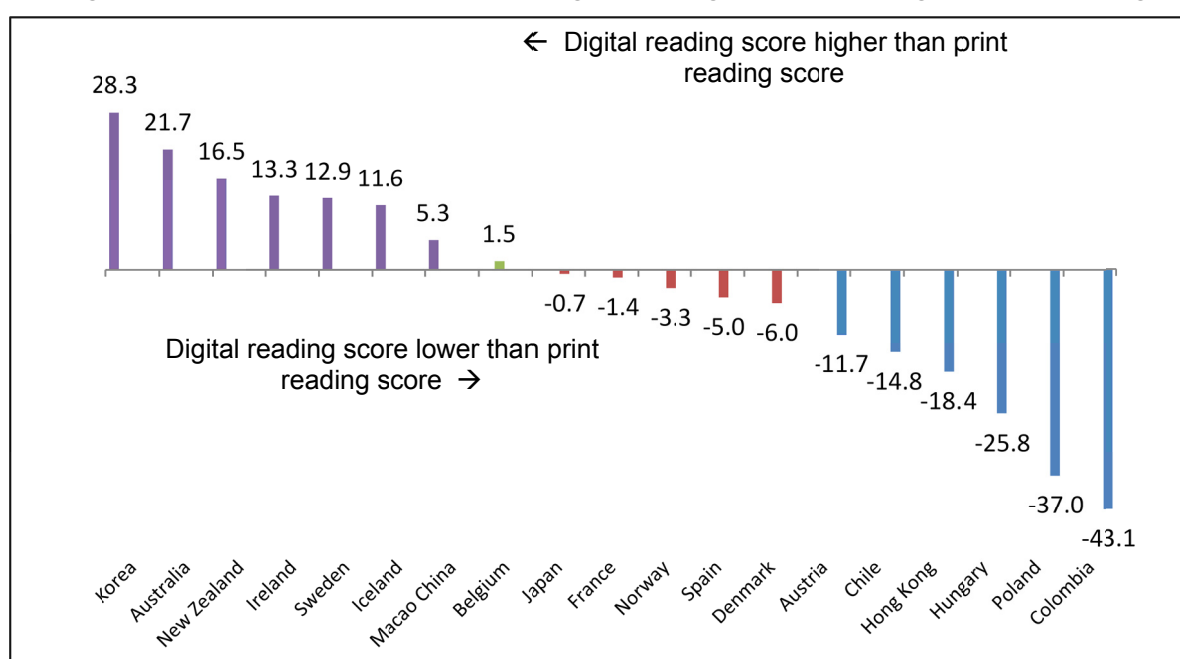
Table 5.1: Mean Country Scores and Ranks for the Digital and Print Reading Scales

Digital reading rank		Digital reading mean	IRL	Print reading mean	Print rank*
1	Korea	568	▲	539	1
2	New Zealand	537	▲	521	3
3	Australia	537	▲	515	5
4	Japan	519	▲	520	4
5	<i>Hong Kong-China</i>	515	○	533	2
6	Iceland	512	○	500	9
7	Sweden	510	○	497	10
8	Ireland	509		496	11
9	Belgium	507	○	506	6
10	Norway	500	▼	503	7
11	France	494	▼	496	12
12	<i>Macao-China</i>	492	▼	487	15
13	Denmark	489	▼	495	13
14	Spain	475	▼	481	16
15	Hungary	468	▼	494	14
16	Poland	464	▼	501	8
17	Austria	459	▼	470	17
18	Chile	435	▼	449	18
19	<i>Colombia</i>	369	▼	413	19
	Significantly above OECD average		▲	Score significantly above Ireland's	
	At OECD digital reading average		○	Score not significantly different from Ireland's	
	Significantly below OECD average		▼	Score significantly below Ireland's	

*Print rank is based on the relative rank among the 19 countries that participated in the digital reading assessment. Non-OECD countries are in italics.

Ireland is among seven countries (including Australia, Iceland, Korea, Macao-China, New Zealand and Sweden) that achieved a mean digital reading score that was significantly higher than the corresponding score on the print reading assessment (Figure 5.1). For Ireland this difference was just over 13 score points. On the other hand, students in Austria, Chile, Colombia, Hong Kong-China, Hungary and Poland performed significantly lower on digital reading than on the print reading assessment. Students did not differ significantly in terms of their performance on the digital and print reading assessment in Belgium, Denmark, France, Japan, Norway and Spain. It should be noted that Ireland has the fourth largest performance difference in favour of digital reading. Performance patterns in Iceland and Sweden are similar to Ireland.

Figure 5.1: Differences Between Print and Digital Reading Scale Scores (Digital – Print Reading)



Source: OECD, 2011a.

Gender Differences in Digital Reading

Female students outperformed male students in all countries, although the gender difference was not significant in Colombia. In Ireland, female students achieved a mean digital reading score (525) that was 31 points higher than male students (494). While the gender difference for the digital reading assessment (31 points) was narrower than for the print reading assessment (39 points) in Ireland, it was higher than the corresponding average gender difference on digital reading across OECD countries (24 points). Ireland has the third largest gender difference, behind Norway (35 points) and New Zealand (41 points).

Both female and male students in Ireland achieved significantly higher mean digital reading scores than print reading scores (515 for females and 476 for males on digital reading). The mean score on digital reading (compared with print reading) was 9 score points higher for females, and 17 score points higher for males.

Performance on Digital Reading Proficiency Levels

Student performance can also be described in terms of proficiency levels, which group scores in a way in which their skills can be described. Four proficiency levels for digital reading are described, with Level 2 representing baseline proficiency. According to the OECD, Level 2 is the minimal required level if students are to meet the digital reading demands of 21st century economies and societies. Level 5 represents top performing students (Table 5.2).

The percentage of top-performing students (at proficiency Level 5 or above) in Ireland is identical to the average percentage across OECD countries (8%). Ireland has considerably fewer such students than the highest achieving countries, Korea (19%), New Zealand (19%) and Australia (17%). However, Ireland has a greater proportion of higher achieving students than France (5%), Austria (3%) and Poland (2%).

On the other hand, just 12% of students in Ireland perform below Level 2, compared to 17% across OECD countries. The proportion of such students in Ireland is well above the corresponding proportion in Korea (2%) but is about the same as in Australia and New Zealand (both 10%). It seems that Ireland's high average performance on digital reading literacy may in part be due to the strong performance of lower-achieving students relative to the OECD average.

Table 5.2: Proficiency Levels on the PISA 2009 Digital Reading Scale and Percentages of Students Achieving Each Level (Ireland and OECD Average)

Level (Score range)	Students at this level are capable of:	OECD	Ireland
5 and above (above 626)	Critically evaluating information from several web-based sources using criteria that they have generated themselves. They are also able to navigate across multiple sites without explicit direction, allowing them to locate information efficiently. Students at this level can be regarded as 'top performers' in digital reading.	8%	8%
4 (554 to 626)	Judging the authority and relevance of sources of information when provided with support. They can locate and synthesise information from several sites when this requires a low-level of inference. They are also capable of dealing with a range of text formats and types and can compare and contrast information from different sites and form opinions about what they read by drawing on information from their everyday life. Students at this level are considered to be able to perform challenging digital reading tasks.	23%	24%
3 (481 to 553)	Responding to digital tests in both authored and message-based environments. They are able to locate information across several pages and compare and contrast information from a number of texts when given explicit guidance. They evaluate information in terms of its usefulness for a specified purpose or in terms of personal preference. They can be considered able to perform moderately complex digital reading tasks.	30%	33%
2 (408 to 480)	Using conventional navigation tools to locate information when given explicit instructions. They can perform tasks such as selecting relevant information from a search results or drop down menu, locating and transferring information from one text to another and form generalisations (e.g. recognising the intended audience of a website).	22%	23%
Below Level 2 (lower than or equal to 407)	The performance of students at this level cannot be described. Students performing below Level 2 lack basic digital reading skills.	17%	12%

Source: OECD, 2011a.

Students' Navigation in the Digital Assessment

Navigation is considered to be a central part of the process of digital reading. In the digital reading assessment, navigation is measured using three indices: *number of page visits*, *number of relevant pages visited* and *number of visits to relevant pages*. Differences in these navigation indices between countries, especially in the number of relevant pages visited, closely match country differences in digital reading performance. For example, the average number of relevant pages visited across all tasks in Korea (the highest performing country) is 53, while the corresponding average in Colombia (the lowest performing country) is 31.

In Ireland, the average number of relevant pages visited across all tasks (47 pages) is similar to, but significantly above, the OECD average (46 pages). The average number of visits to relevant pages in Ireland (61 visits) is not significantly different from the average across OECD countries (60 visits).

In Ireland, the number of relevant pages visited was most strongly associated with digital reading performance ($r = .82$), followed by the number of visits to relevant pages ($r = .64$) and the overall number of pages visited ($r = .42$). A detailed illustration of navigation through specific digital reading items is presented in Chapter 3. A more detailed analysis of the relationships between navigational behaviour and performance on the PISA 2009 digital reading assessment can be found in OECD (2011a).

Students' Use of and Familiarity with ICT, and Performance on Digital Reading

Significantly more students in Ireland reported having access to a computer (97%) and the Internet (93%) at home when compared to the average across OECD countries (94% and 89%, respectively). Students in Ireland were also significantly more likely to report having access to a computer (96%) and the Internet (95%) at school than on average across OECD countries (93% for both access to a computer and the Internet).

Despite the high percentages of students in Ireland who reported having access to a computer and the Internet at home and at school, Irish students reported below average levels of computer use at home (for both leisure purposes and for schoolwork) and at school, compared to the corresponding averages across OECD countries. Also, Irish students reported having significantly lower levels of self-confidence in performing high-level ICT tasks than on average across the OECD; however, they did not differ significantly in terms of their attitudes towards computers (see Table 5.3).

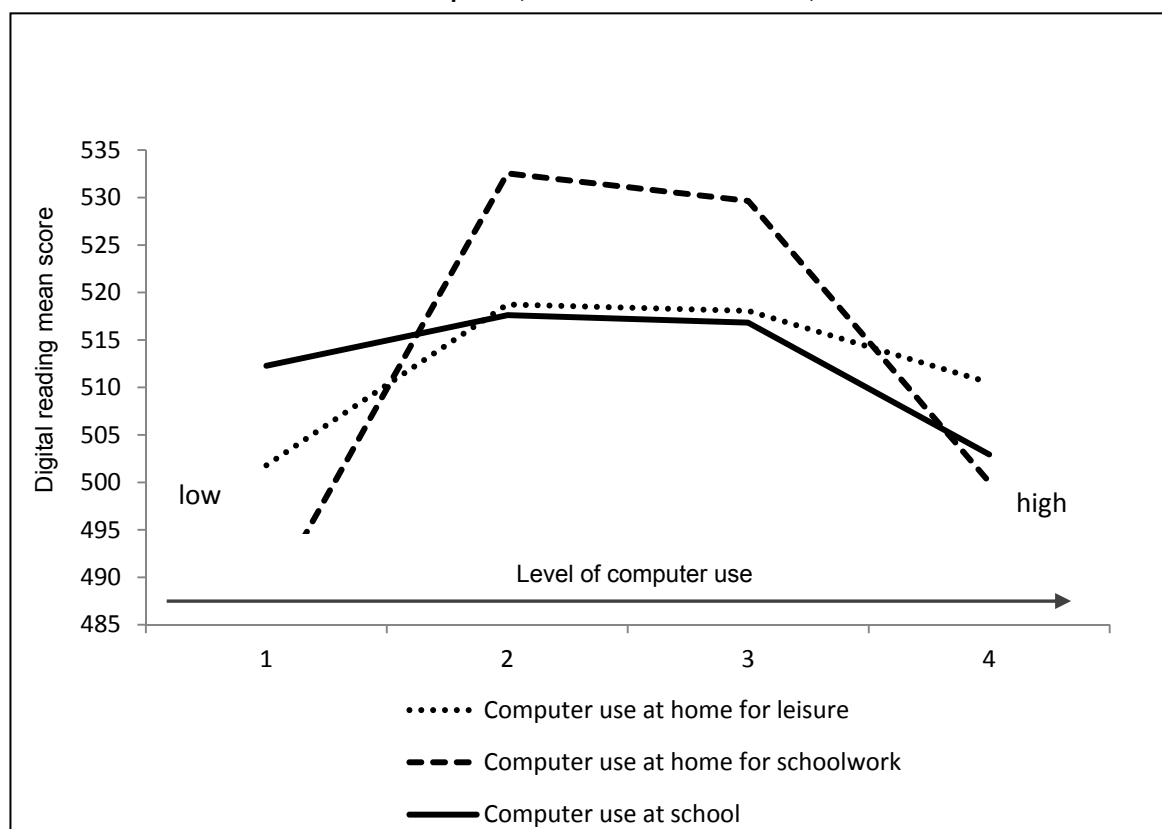
Table 5.3: Comparisons of Mean Scores on ICT Usage and Engagement Indices (Ireland and OECD Average)

Index	Ireland mean	OECD mean
Computer use at home for leisure purposes	-0.18	0.00
Computer use at home for schoolwork	-0.62	0.00
Computer use at school	-0.37	0.00
Attitudes towards computers	0.02	0.00
Self-confidence in performing high-level ICT tasks	-0.11	0.00

Note: scale scores below zero are below the corresponding OECD country average score (0.00).

Student performance in digital reading in Ireland is also related to the level of computer use by students, both in school and at home, for leisure and schoolwork purposes. As can be seen in Figure 5.2, students who report medium levels of computer use tend to achieve higher digital reading scores than those who report low or high levels of computer use. This pattern is particularly pronounced for the level of computer use at home for schoolwork.

Figure 5.2: Performance of Students in Ireland on Digital Reading and Level of Computer use at Home for Leisure Purposes, at Home for Schoolwork, and at School



Associations Between Digital and Print Reading

In Ireland, there is a strong correlation between performance on the print reading and digital reading tests ($r = .82$). This means that students who do well on print reading also do well on digital reading and suggests that similar skills are required to understand and use both print and digital texts.

Despite the strong correlation between the two reading assessments, Irish students performed markedly better on digital reading than on print reading. It should be noted that as this was the first time an assessment of digital reading was administered in PISA, performance on the test is not linked back to earlier assessments. Therefore, many of the linking and scaling factors noted in Chapter 4 do not apply to the assessment of digital reading. Also, there is some evidence from test administrators' observations that students in Ireland were more engaged in the digital reading assessment than the print assessment. The novel format of the digital reading assessment as well as the fact that the test focused on one domain only and was less than half the length of the print test may have led students to engage more effectively with the digital reading assessment.

Chapter Highlights

Ireland's mean digital reading score is 509, which is significantly above the average score across OECD countries that participated in the digital reading assessment (499).

Ireland ranked 8th out of the 19 countries that participated in the digital reading assessment.

Students in Ireland achieved a mean digital reading score that is significantly higher than their mean score on the paper-based reading assessment.

In Ireland, female students achieved a mean digital reading score that is significantly higher than male students. Both female and male students in Ireland achieved significantly higher mean digital reading scores than their corresponding scores on the paper-based reading assessment.

The percentage of top performing students in Ireland on digital reading is the same as the average across OECD countries, while Ireland has fewer poorly-performing students compared to the average across OECD countries.

The extent and nature of the navigation strategies used by students in the digital reading assessment are closely linked to performance. In Ireland, the number of relevant pages visited was most strongly associated with performance, followed by the number of visits to relevant pages and the overall number of pages visited.

Students in Ireland reported above average levels of access to computers and the Internet, both at home and at school. Despite this, students in Ireland reported below average levels of computer use at home (both for schoolwork and leisure purposes) and at school, when compared to OECD average usage levels.

Student performance in digital reading in Ireland is related to the level of computer use by students, with those reporting medium levels of use achieving higher digital reading scores than those who report low or high levels of computer use.

Further comparisons of performance on the print and digital reading assessments will be described in the PISA 2009 national report, to be published in early 2012.

Chapter 6: Student and School Characteristics Related to Reading

This chapter examines some of the student and school factors associated with both print and digital reading in PISA 2009, which provides us with the first opportunity to examine characteristics associated with digital reading achievement as well as similarities and differences between the correlates of print and digital reading. The analyses reported in this chapter describe how single independent variables are related to reading and generally do not take into account the fact that many factors related to achievement are also related to one another. It should also be borne in mind that the scales (indices) derived from responses to the questionnaires are based on self-reported perceptions and it has not been established if these are comparable across countries. These issues are taken up in the forthcoming full national report on PISA 2009, due for publication in early 2012 (see www.erc.ie).

Student Characteristics

Immigrant and Language Background

In Ireland, immigrant students who speak English or Irish have average scores for both print and digital reading which are not significantly different from native students (Table 6.1). However, native students perform significantly better on both print and digital reading than immigrant students who speak a language other than English or Irish at home most of the time.

Native students perform significantly better on digital reading than on print reading, while the average print and digital reading scores for immigrant groups do not differ significantly.

Table 6.1: Mean Print and Digital Reading Scores in Ireland, by Immigrant/Language Status

	%	Print reading	Digital reading	Difference (digital – paper)
Native	92.0	501.9	513.2	+11.3
Immigrant with English or Irish	4.5	499.7	502.2	+2.5
Immigrant with other language	3.5	442.7	461.1	+18.4

Note: missing = 4.9% (i.e., 4.9% of the sample did not provide information on language).

The percentage of immigrant students in Ireland has increased from just over 2% in 2000 to just over 8% in 2009, while the percentage of students who speak a language other than English or Irish at home has seen a similar level of increase (from 0.9% to 3.6%). Also, the relationship between immigrant status and achievement underwent a reversal between 2000 and 2009. While students in Ireland with an immigrant background performed significantly above native students in 2000, they obtained a mean score that was below that of native students in 2009.

Economic, Social and Cultural Status (ESCS)

In PISA, student socioeconomic background is measured using an index of economic, social and cultural status (ESCS). This index is made up of six inter-related measures, all of which are individually related to achievement: parental occupation, educational level of parents, number of books in the home, family wealth (material possessions), home educational resources and cultural possessions at home. Student ESCS is positively associated with both print and digital reading (Table 6.2) although the achievement gap between students in the low (bottom third) and high (top third) ESCS categories is narrower for digital reading than

for print reading (65 points versus 76 points, respectively). Students in the low and average (middle third) ESCS categories performed significantly better on the digital reading assessment than on print reading assessment, while there was no significant difference in performance on the two assessments for students in the high ESCS category.

Table 6.2: Mean Print and Digital Reading Scores in Ireland, by ESCS Group

	%	Print reading	Digital reading	Difference (digital – paper)
Low (bottom third)	33.2	459.5	476.4	+16.9
Average	33.5	497.9	510.6	+12.7
High (top third)	33.4	535.5	541.6	+6.1

Note: missing = 2.4% (i.e., 2.4% of the sample did not provide information on ESCS).

Migrant students who speak English or Irish have significantly higher mean ESCS scores, on average, than both native students and migrant students who speak a language other than English or Irish at home (Table 6.3). There is no significant difference in the average socioeconomic status (as measured by ESCS) of native students and migrant students who speak a language other than English or Irish.

These differences between groups on the index of ESCS are identical to those found on the index of parental occupation, while there are no statistically significant differences between groups in average level of home educational resources or cultural possessions (Table 6.3). Migrant students who speak a language other than English or Irish have significantly lower levels of material possessions, on average, than native students and migrant students who speak English or Irish.

Each of the four scale variables that contribute to the overall ESCS index is positively and significantly associated with both digital and print reading achievement, although the correlations are weaker in the case of material possessions (Table 6.3).

Table 6.3: Comparisons of Mean Scores of Students in Ireland on Student Socioeconomic Background Variables by Migrant and Language Status, and Correlations with Print and Digital Reading Achievement

	Comparisons			Correlation (r)	
	Migrant & Language Status			Print	Digital
	Native – Migrant with English/Irish	Native – Migrant with other language	Migrant with English/Irish – Migrant with other language		
ESCS	↓	=	↑	.359	.331
Parental occupation	↓	=	↑	.317	.285
Home educational resources	=	=	=	.227	.226
Cultural possessions	=	=	=	.272	.270
Material possessions	=	↑	↑	.065	.092

Note: Significantly higher ($p \leq .05$) ↑; significantly lower ($p \leq .05$) ↓; Not significantly different ($p \leq .05$) = .

The two other variables which contribute to the ESCS index (educational level of parents and number of books in the home) are also positively associated with both print ($r = .238$ and $r = .418$, respectively) and digital reading ($r = .202$ and $r = .377$, respectively), with slightly weaker correlations for digital reading.

Ireland's mean score on the overall ESCS index was close to the OECD average in both 2000 and 2009. The effect of ESCS on print reading performance in Ireland, as measured by the score-point difference on the print reading scale associated with one unit increase on the ESCS index, was also very similar to the effect seen on average across OECD countries, both in 2000 and 2009.

The Student in School

School Economic, Social and Cultural Status (ESCS)

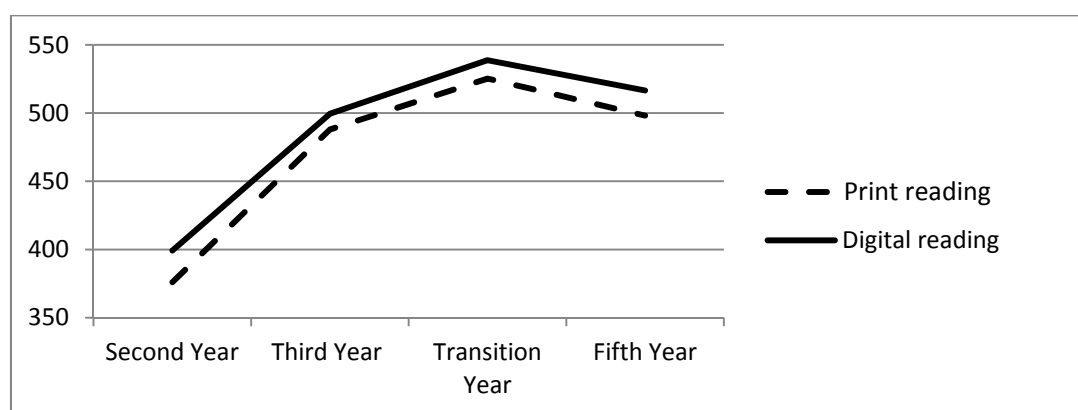
Students were assigned a score representing the average ESCS of their school. As with student-level ESCS, school-level ESCS is positively associated with print and digital reading. Students in schools with high average ESCS achieved mean print and digital reading scores of 530 and 539, respectively, while those in schools with average ESCS had a mean print reading score of 499 and a mean digital reading score of 506. Students in schools with low ESCS obtained a mean print reading score of 458 and a mean digital reading score of 483.

The achievement gap between students in the low- and high-ESCS schools is narrower for digital reading than for print reading (57 points and 72, respectively). While students in each ESCS school category had higher mean digital reading scores than print reading scores, the difference was only significant for those in low-ESCS schools.

Current Grade (Year) Level

As can be seen from Figure 6.1, students in Transition Year achieved the highest scores for both print and digital reading, followed by students in Fifth Year, Third Year and Second Year. Students in all years achieved significantly higher mean scores in digital reading than print reading, although the difference was not significant for students in Second Year.

Figure 6.1: Comparisons of Mean Print and Digital Reading Scores of Students in Ireland, by Current Grade (Year) Level



Since 2000, there has been a substantial increase in the percentage of students in Transition Year (from 16% to 24%) and a corresponding decrease in the percentage of students in Fifth Year (from 19% to 14%). The largest drop observed in print reading performance since 2000 was among Fifth Year students, perhaps reflecting the movement of more able students from Fifth Year to Transition Year since 2000.

School Sector and Gender Composition

Students attending girls' secondary schools obtained mean digital and print reading scores that are significantly higher than the mean scores of students attending other school types (Table 6.4); however, existing research indicates that achievement differences associated with school sector are accounted for by differences in socioeconomic composition (e.g. Cosgrove Shiel, Sofroniou, Zastrutzki & Shortt, 2005; Shiel et al., 2001). The average digital reading scores of students in community/ comprehensive and vocational schools were significantly higher than the corresponding print reading scores. While students in boys', girls' and mixed secondary schools achieved higher mean digital reading scores than print reading scores, the differences were not significant.

Table 6.4: Mean Print and Digital Reading Scores of Students in Ireland, by School Sector/Gender Composition

	%	Print reading	Digital reading	Difference (digital – paper)
Community/Comprehensive	15.4	486.9	511.2	+24.3
Boys' Secondary	18.5	488.2	498.2	+10
Girls' Secondary	22.5	530.8	537.6	+6.8
Mixed Secondary	20.5	504.3	512.8	+8.5
Vocational	23.1	465.6	484.6	+19

Student-Teacher Relations and Disciplinary Climate

The quality of student-teacher relations, as measured by items on the student questionnaire, is weakly associated with both print and digital reading ($r = .22$ and $r = .19$, respectively). That is, students who perceive themselves as having better relationships with their teachers tend to have higher print and digital reading scores than students who perceive themselves as having poorer relationships with their teachers. It should be noted, however, that these achievement differences may be due, at least in part, to differences in socioeconomic status, as more positive student-teacher relations are associated with higher student socioeconomic status ($r = .11$). Ireland achieved a mean score of -0.08 on the index of the quality of student-teacher relations, which is significantly lower than the average across OECD countries, implying that the perceived quality of student-teacher relations in schools in Ireland is lower.

Students provided information on the extent of disciplinary problems during their English classes by indicating their level of agreement with statements such as 'the teacher has to wait a long time for the class to settle down'. Higher scores on the resulting index indicate a more positive disciplinary climate. Disciplinary climate is positively, but weakly, associated with both print reading ($r = .17$) and digital reading ($r = .12$). Again, more positive outcomes on the index are significantly associated with higher ESCS, although the correlation is weak ($r = .05$). While Ireland's score on this index was significantly above the OECD average in 2000, it is not significantly different to the OECD average in 2009.

Chapter Highlights

Both student and school socioeconomic background are positively associated with print and digital reading achievement, although differences in achievement between students from high and low socioeconomic backgrounds (at both the individual student and school levels) are less pronounced for digital than for paper-based reading.

Quality of student-teacher relations and disciplinary climate during English class are also positively associated with print and digital reading.

Native students significantly outperformed immigrant students who speak a language other than English or Irish in both print and digital reading.

The percentages of immigrant students and students who speak a language other than English or Irish at home have increased significantly since 2000. While immigrant students (regardless of the language spoken) significantly outperformed native students in 2000, they obtained a mean score that was significantly below that of native students in 2009.

Students in girls' secondary schools achieved higher scores in both reading assessments than their counterparts in other school types, as did Transition year students, compared with students in the Second, Third and Fifth years.

Further detailed analysis of background characteristics is expected in early 2012 with the publication of the full PISA 2009 national report (see www.erc.ie).

Chapter 7: Students' Engagement with Print and Digital Texts

Since reading was a major assessment domain in PISA 2009, and digital reading was also a focus, contextual information was gathered on students' engagement in reading, their involvement in online reading activities, their enjoyment of reading, and their use of reading strategies. Unlike the more systemic factors described in the previous chapter, teachers may be more able to influence and change the student engagement factors described here.

This chapter is divided into three main parts. The first deals with engagement in and enjoyment of reading, the second with students' use of reading strategies, and the third with their library usage. Where relevant, reference is made to differences associated with gender and socioeconomic status, to associations with print and digital test performance, and to changes in reading practices and attitudes since 2000.

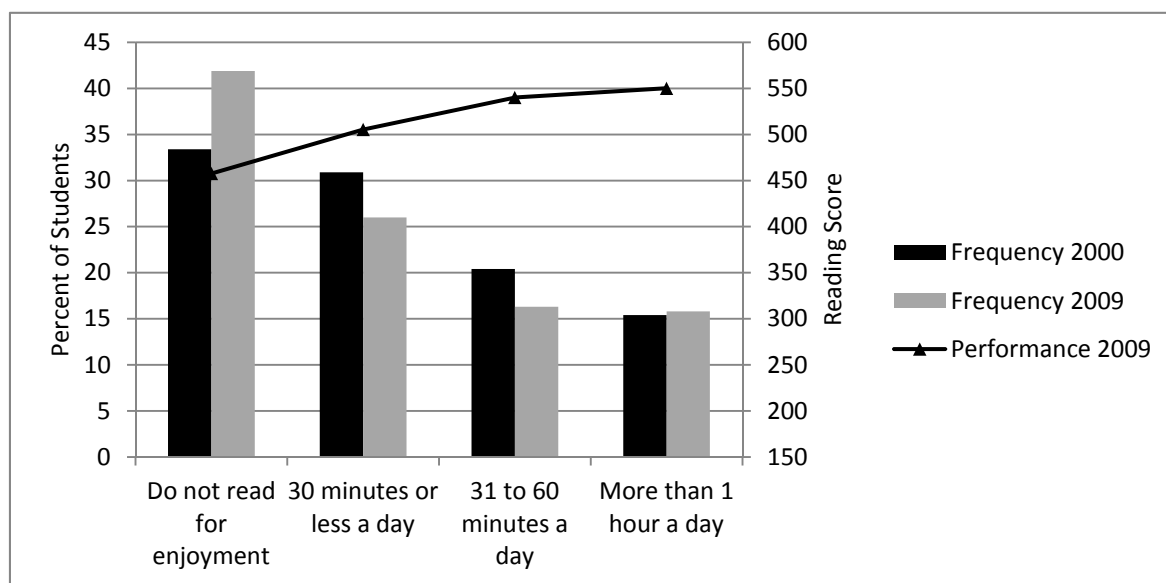
Engagement with Reading

This section describes the frequency with which 15-year-olds read for enjoyment, the diversity of the print texts they read, reading for school, the frequency with which they engage in online reading activities, and the diversity of the digital texts they read. It concludes by examining students' overall enjoyment of reading.

Frequency of Reading Print Texts for Enjoyment

In 2009, 42% of 15-year-olds in Ireland reported that they did not read at all for enjoyment, 26% that they read for up to 30 minutes per day; 16% that they read for 31-60 minutes a day; and 16% that they read for at more than one hour a day (Figure 7.1). More males (48%) than females (36%) in Ireland said that they did not read for enjoyment.

Figure 7.1: Frequency of Reading Print Texts for Enjoyment (Ireland, 2000 and 2009) and Performance on Print Reading (Ireland, 2009)



Irish students who read for enjoyment for 31-60 minutes per day or longer had a significantly higher average print reading score (540) than students who read for 30 minutes or less (505), and students who did not read at all (458) (Figure 7.1). On the other hand, those

who read for 31-60 minutes (540) and those who read for more than an hour (550) had mean scores that were not significantly different from one another. Hence, on average, the highest-scoring readers on PISA read for at least 30 minutes per day, but no additional benefits in terms of average reading achievement are apparent for those who read for more than one hour a day. A similar pattern was found for digital reading. Those who did not read print texts for enjoyment achieved a mean score of 479 on the digital reading scale, while those who read for 31 to 60 minutes achieved a score of 542.

Twice as many students in the bottom ESCS (socioeconomic status) quartile (52%) reported that they did not engage in any reading for enjoyment, compared with the top quartile (26%). Thus, like reading achievement, reading for leisure varies by student socioeconomic status.

Diversity of Reading

The print texts read most frequently by students in Ireland (i.e., at least several times a month) were newspapers (68%), magazines (57%), fiction (30%), non-fiction (16%) and comics (8%). Reading fiction and non-fiction texts on a regular basis were both associated with higher reading achievement (e.g., those who read fiction at least several times a month had an average reading score that was significantly higher, by 63 score points, than those who did not read fiction at all). In contrast, achievement differences between those who read and did not read newspapers and comics were small, with those who read newspapers and comics having significantly lower scores than those who did not.

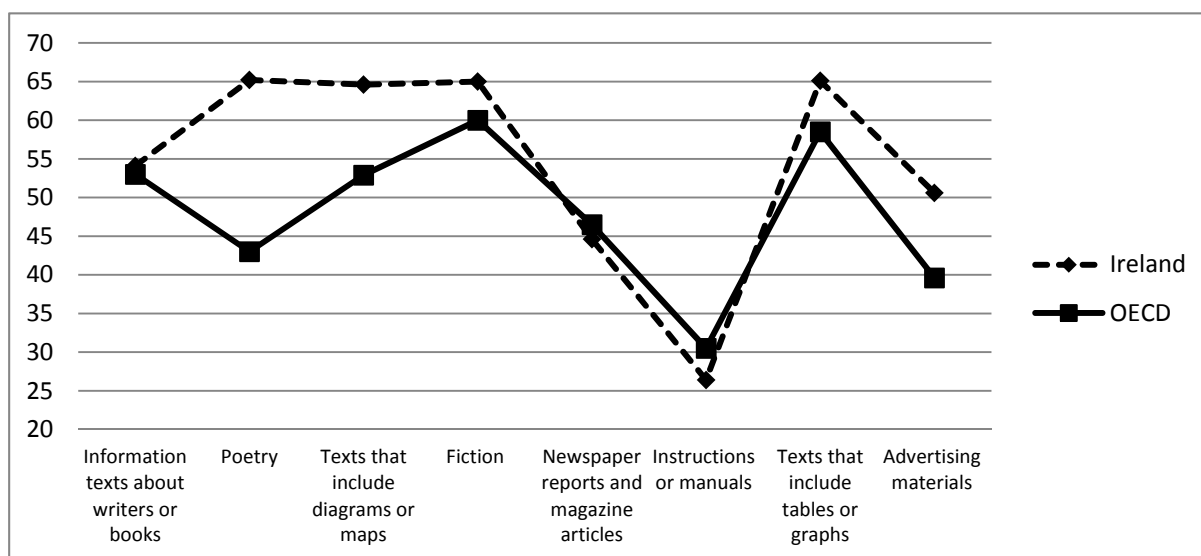
Students in Ireland had a below average score, when compared to their counterparts across OECD countries, on an index of diversity of reading materials read (-0.13, compared with 0.0). Female students in Ireland read fiction and magazines more often than males, while males read newspapers and comics more often, meaning that their reading was less diverse. In Ireland, there is an increase of 19 points in reading performance associated with a one standard deviation increase on the index of diversity of reading print materials.

The percentage of students in Ireland who did not read for enjoyment in 2009 (42%) was higher than in 2000 (33%), though similar percentages reported reading for more than an hour a day in both years (15-16% of students) (Figure 7.1). While the average percentage of students who did not read for enjoyment across OECD countries has also increased (from 31% in 2000 to 36% in 2009), it is still below the average in Ireland in 2009 (42%).

Frequency of Print Reading at School and for Homework

Students in PISA 2009 were asked how often they read various print texts in school or for homework.

Figure 7.2: Percentages of Students Reading Various Print Texts at School or for Homework Several Times a Week or More Often (Ireland and OECD Average; 2009)

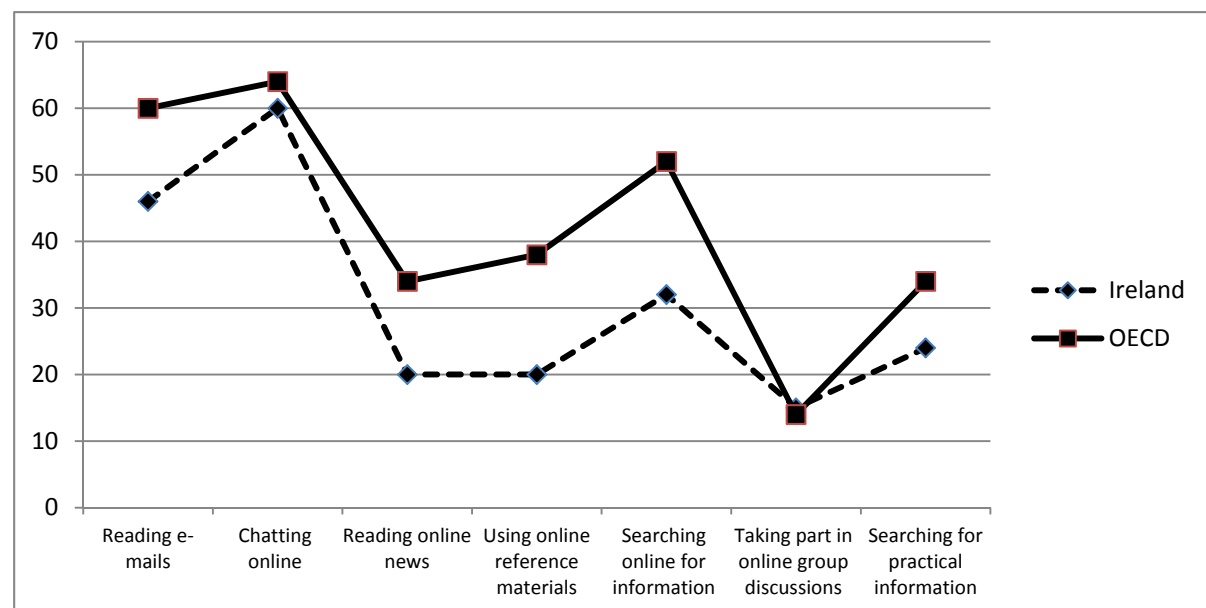


More students in Ireland reported reading poetry, texts with diagrams or maps, texts with tables or graphs and advertising materials several times a week or more than students on average across OECD countries (Figure 7.2). Reading of instructions or manuals was low in Ireland and on average across OECD countries.

Frequency of Online Reading Activities

Students in PISA 2009 were also asked to indicate the frequency with which they engaged in various online reading activities, either in or out of school. The activities in which students in Ireland engaged most frequently (at least several times a week) were chatting online (60%), reading e-mails (46%) and searching online for information about a topic (32%) (Figure 7.3).

Figure 7.3: Percentages of Students Engaging in Online Reading Activities at Least Several Times a Week (Ireland and OECD Average; 2009)



With the exception of chatting online and taking part in online discussions, fewer students in Ireland than on average across OECD countries indicated weekly engagement in online reading activities. In Ireland, more female than male students reported reading e-mails (50% versus 42%) and chatting online (68% versus 53%) while more males than females reported searching online for information about a topic (35% versus 29%) and searching for practical information (27% versus 21%).

Diversity of Online Reading

Students in Ireland achieved an average score of -0.50 on a scale of diversity of online reading materials, for which the OECD average was set at 0.0. Although the average scores of male and female students in Ireland were not significantly different from one another, on average across OECD countries, males achieved a significantly higher score on diversity of online reading than females.

Students in Ireland in the bottom quarter of the diversity of online reading index had an average reading score of 468, which was significantly lower than the average score of students in the top quarter (512). The difference (44 points) is greater than the OECD average difference (37). A 19-point increase in print reading performance was associated with a one-standard deviation increase in diversity of online reading activities. The corresponding change for digital reading performance was 24 points.

Enjoyment of Reading

In Ireland, 46% of students agreed or strongly agreed with the statement, 'I feel happy if I receive a book as a present' (41% of males and 51% of females), while 32% (23% of males, 40% of females) expressed similar levels of agreement with the statement, 'Reading is one of my favourite hobbies'. Based on 11 such statements (some positively worded, others negatively), an index of enjoyment of reading was established, with an OECD average of 0.0 and a standard deviation of 1.⁶ The average score on the index for students in Ireland was -0.08, indicating a level of enjoyment of reading that was slightly but significantly below the OECD average. Consistent with their responses to the individual items, female students in Ireland had a significantly higher average reading for enjoyment score (0.15) than male students (-0.30). However, the difference (-0.45) was smaller than on average across OECD countries (-0.62). Finland, one of the highest-performing countries on reading literacy in PISA 2009, had a gender difference of -0.91, indicating much higher enjoyment of reading among females than among males.

In Ireland, students in the bottom quarter of the enjoyment of reading scale had an average print reading score of 445 points, while those in the top quarter had a score of 567. The difference (122 points) is greater than the OECD average difference (103). The increase in print reading performance associated with a one-standard deviation increase in enjoyment of reading in Ireland was 45 points. The corresponding change for digital reading was 37 points. These values indicate that enjoyment of reading is more strongly related to print and digital reading performance than either diversity of print or online texts read.

Students in Ireland in 2009 had a mean score on the enjoyment of reading scale (-0.08) that was not significantly different from the corresponding score in 2000 (-0.05). However, females in 2009 reported significantly lower enjoyment (0.15) than females in 2000 (0.25). The difference for males was not statistically significant.

⁶ It may be noted that enjoyment of reading and diversity of reading are positively associated with one another (in Ireland, the correlation between these two scales is .44; OECD, 2010c).

Students' Use of Reading Strategies

This section describes how useful students perceive selected strategies to be for understanding and remembering and for summarising texts and the relationships of these strategies with reading performance.

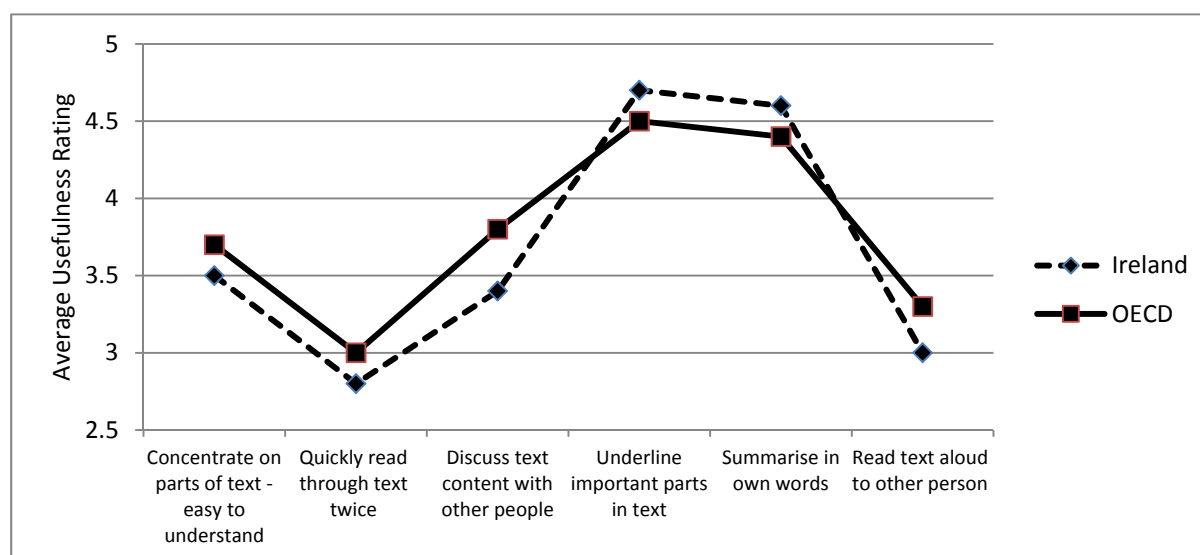
Understanding and Remembering

Students were asked to evaluate the extent to which a range of strategies are useful for understanding and remembering information in texts, using a six-point scale ranging from 'not useful at all' to 'very useful'.

In Ireland and on average across OECD countries, higher level strategies such as 'underline important parts in the text' and 'summarise the text in own words' were endorsed to a greater extent than lower level strategies such as 'quickly read through the text twice' and 'read the text aloud to another person' (Figure 7.4).

Based on student responses, which were benchmarked against experts' ratings of the strategies, an index of understanding and remembering was constructed such that the OECD average was set at 0 and the standard deviation at 1 (see the *PISA Technical Report* (OECD, 2011b) for more details on the construction of this and related indices). The mean score for Ireland was 0.16, which is significantly above the OECD average (indicating somewhat stronger recognition of more effective strategies by students in Ireland – see Figure 7.4). Perhaps surprisingly, students in Finland had a score of 0.03, indicating lower average awareness of effective strategies for understanding and remembering than their counterparts in Ireland.

Figure 7.4: Perceived Usefulness of Six 'Understanding and Remembering' Strategies (Ireland and OECD Average; 2009)



Female students in Ireland reported a higher average awareness of understanding and remembering strategies (0.23) than male students (0.08), though the difference after rounding (0.14) was smaller than the OECD average difference (0.27) or the difference in Finland (0.58). In Ireland, students in the bottom quarter of the scale had an average reading score (455) that was significantly lower than that of students in the top quarter (540). The increase in reading performance in Ireland associated with a one standard deviation increase on the index is 35 points. The corresponding change for digital reading is 31 points. There is

also a weak to moderate correlation between understanding and remembering and economic, social and cultural status (ESCS) (0.16).

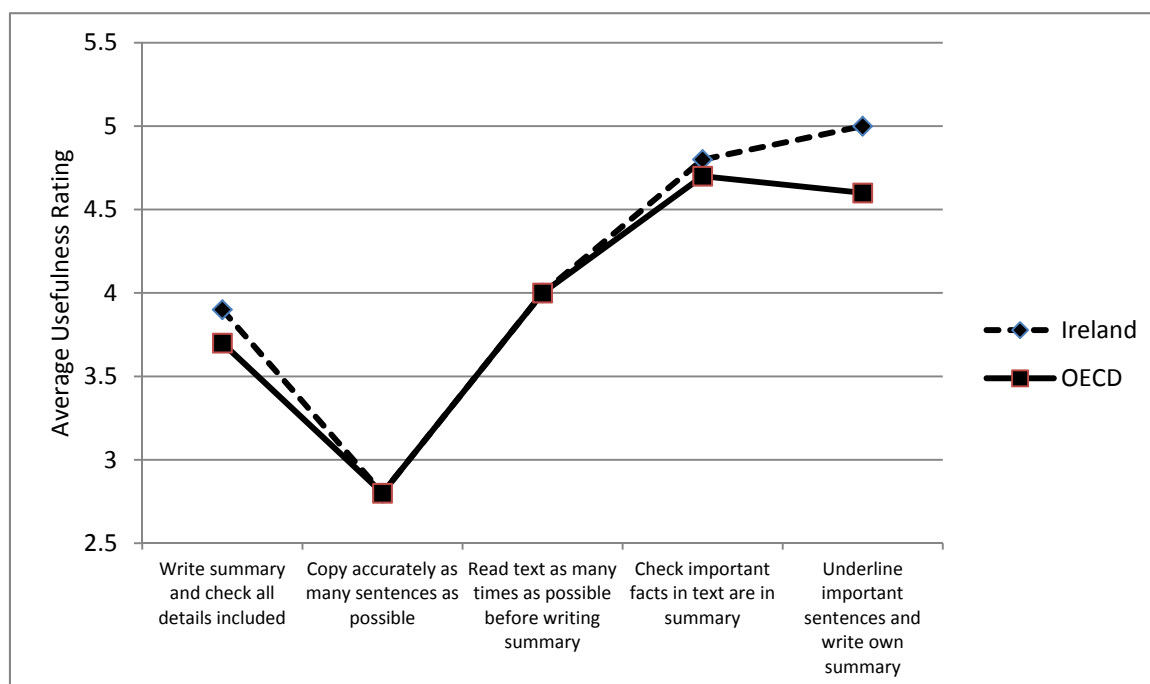
Summarising Information

Students were also asked to evaluate the usefulness of several strategies for summarising texts. Again, 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’ are more strongly endorsed than lower-order strategies such as ‘I try to copy out accurately as many sentences as possible’ and ‘Before writing the summary, I read the text as many times as possible’. Outcomes for students in Ireland and on average across OECD countries are broadly similar (Figure 7.5).

As with Understanding and Remembering, the ratings of experts provided a benchmark against which to compare student responses, and a scale was created with an OECD average of 0.0 and a standard deviation of 1. The mean score for students in Ireland was 0.14, with female students achieving a mean score of 0.29 and males -0.01. The difference (0.30) is about the same as the OECD average difference (0.30). The difference in Finland, in favour of female students, was among the highest across OECD countries (0.60).

Students in Ireland in the bottom quarter of the summarising index had a mean score of 447, which is significantly lower than the mean score of students in the top quarter (541). A difference of 39 score points in print reading is associated with a one-standard deviation change on the summarising index, while the corresponding difference for digital reading is 38 points. The correlation between scores on the summarising information index and ESCS is 0.14 (a weak to moderate correlation), indicating, similar to understanding and remembering strategies, that higher-SES⁷ students tended to endorse effective summarisation strategies to a greater extent than lower-SES students.

Figure 7.5: Perceived Usefulness of Five ‘Summarising’ Strategies (Ireland and OECD Average; 2009)



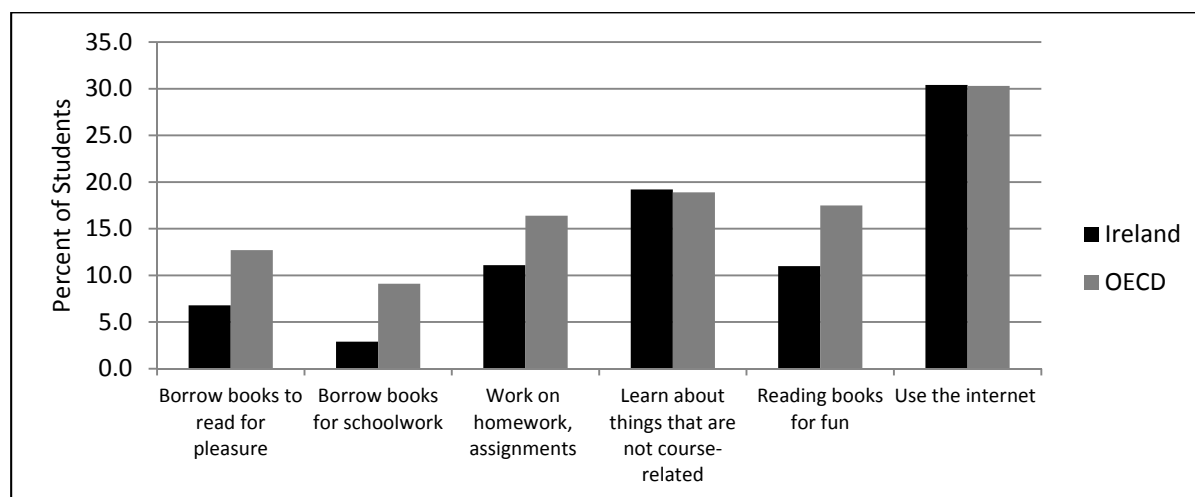
⁷ SES refers to students’ socioeconomic status.

Students' Library Usage

Students in PISA 2009 were asked how often they used libraries for various purposes. Figure 7.6 indicates the percentages of students in Ireland and on average across the OECD who used libraries for a range of purposes at least several times a month. Apart from Internet usage, library usage was not extensive among students in Ireland, with just 3% reporting that they borrowed library books for schoolwork, and 11% reporting use of the library to work on homework, coursework or research assignments. On a scale of library use, comprising the variables in Figure 7.6 as well as the frequency of library usage for reading magazines and newspapers, students in Ireland had a score of -0.32, or one third of a standard deviation below the OECD average. The correlation between library usage and socioeconomic status (ESCS) in Ireland was small and not statistically significant, indicating that students from all SES backgrounds were equally likely to use libraries for a variety of purposes.

In Ireland, 81% of students reported that they had a library in their school, compared with an OECD average of 93%.

Figure 7.6: Engagement of Students in Library Activities at Least Several Times a Month (Ireland and OECD Average; 2009)



Chapter Highlights

Frequency of leisure reading and enjoyment of reading are strongly associated with print reading performance, with those who report frequent reading and higher levels of enjoyment obtaining higher mean scores.

Frequency of reading both print and digital texts is also positively associated with performance on the digital reading assessment.

Since 2000, the proportion of students in Ireland reporting that they read for enjoyment has declined from 67% to 58%. In 2009, the extent of online reading by students in Ireland was low relative to the OECD average.

Students who reported high levels of awareness of the value of strategies for understanding and remembering and for summarising texts achieved higher scores on average on the print and digital reading scales than those reporting lower levels. Awareness of the value of understanding and remembering and of summarising strategies was higher among students in Ireland than on average across OECD countries.

Library use among students in Ireland was low, compared to the OECD average.

Males report reading for enjoyment less frequently, hold more negative attitudes towards reading, engage with a narrower range of texts and possess a lower awareness of the value of key reading strategies than females, in Ireland and on average across OECD countries.

Many of the variables presented in this chapter are also associated with student socioeconomic status.

Chapter 8: Survey of English Teachers of Third Year Students

Although an international teacher questionnaire is not part of PISA, a national teacher questionnaire is designed and administered in Ireland as part of each PISA cycle. The focus of the teacher questionnaire is determined by the subject area that forms the major domain, and is administered to teachers of that subject only. Thus, as part of PISA 2009 in Ireland, English teachers of Third Year students⁸ in schools participating in the PISA assessment were invited to complete a questionnaire that asked about various aspects of the teaching and assessment of English. The purpose of the questionnaire was to gain insights into teachers' instructional practices, including provision for lower-achieving readers in their classes. A secondary purpose was to identify teachers' engagement in continuous professional development (CPD) relating to the teaching of English and their perceived CPD needs. As the teacher questionnaire is a national instrument, there is no comparative international data.

Of the 144 schools that participated in PISA 2009, 136 returned at least one completed teacher questionnaire. In these schools, 479 of 715 targeted teachers returned completed questionnaires, giving a response rate of 67%. Using PISA criteria for non-response, two schools with a response rate of less than 25% were omitted from the analysis database, leaving 134 schools and 474 teachers in the final set for analysis. The mean number of teachers in each of these schools is 3.54 (SD=1.4).⁹

A bias analysis, in which response rates were compared across school size, socioeconomic status, gender composition and sector indicated that responding and non-responding schools¹⁰ were broadly similar with respect to these variables. However, it should be noted that high SES schools were more likely than low SES schools to return fewer than 50% of their questionnaires. Teacher weights were computed that took school and teacher non-response into account. Weights consisted of (i) a school non-response adjustment; (ii) a within-school teacher non-response adjustment; and (iii) the school sample weight. Applying the teacher weight to the teacher questionnaire results in estimates which correspond to the population of Third Year English teachers in the country.

Seventy-one percent of teachers were female, 34% had taught for 1-8 years, 26% for 9-16 years, and 40% for 17 years or longer. Eighty-six percent reported that they had a graduate degree with English up to the third or fourth year, while a further 5% had a degree with English in first year only. Eighty-two percent reported that they had completed an English methods course as part of their pre-service teacher education and 27% reported that they had taught English as part of the Junior Certificate School Programme in the 2009-10 school year.

The remainder of this chapter is divided into four sections – teaching the English syllabus, teaching literacy in English lessons, teachers' professional development, and school libraries. Since students in PISA 2009 were spread across several English classes in their schools, no links are established between teachers' classroom activities and their students' performance on the PISA assessments of print and digital reading.

⁸ The questionnaire was confined to teachers of Third Year students as Third Year is the final year of lower secondary schooling in Ireland and the majority of the 2009 PISA sample (59.1%) were Third Year students.

⁹ It is technically sound to analyse data through aggregation at the school level despite the small cluster size within schools (Gelman & Hill, 2007).

¹⁰ A responding school is a school that returned at least one questionnaire.

Teacher Questionnaire Scales

The seven teacher scales described in this chapter were derived from the teacher questionnaire data through exploratory and then confirmatory factor analysis. Each scale was standardised to have a mean of 0 and a standard deviation of 1 across the pooled sample of teachers in Ireland, and each explains at least 50% of item response variation. The number of items contributing to each scale ranges from 3 to 6, and the scale reliabilities range from .66 to .90. The scales are:

- Use of activities to promote reading in class time
- Differentiated reading instruction
- Teaching reading strategies – Discursive
- Teaching reading strategies – Memorisation
- Teaching reading strategies – Elaborative
- Responsibility for addressing literacy needs
- Self-assessed competence in literacy instruction.

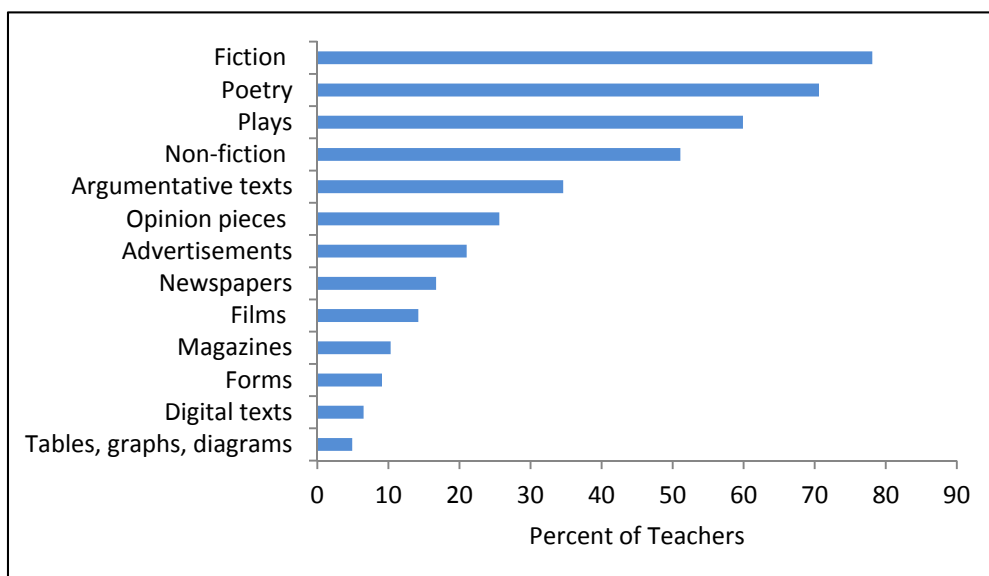
Teaching the English Syllabus

This section looks at the content and processes taught in Third-Year English classes, strategies used by teachers to promote reading, and assessment practices.

Content and Processes Taught in English Lessons

Figure 8.1 shows that the text types most frequently assigned by English teachers were fiction (78%), poetry (71%) and plays (60%). Among the text types covered least often were forms (9%), digital texts (7%) and tables, graphs and diagrams (5%). The strong emphasis on literary reading materials may reflect their pre-eminence on the Junior Certificate English exam, combined with the open nature of the course, which allows teachers to freely choose the materials they deem most appropriate for their students.

Figure 8.1: Percentages of Teachers Assigning English Schoolwork or Homework Involving Various Text Types to Third Year Students at Least Weekly (Ireland 2009)



Teachers were asked how often they used a computer for four activities during English class. The specific computer-based activities in which students were engaged in several or almost all English lessons were writing an essay/paper (4%), reading stories or other texts (1%), drill and practice activities (1%), and browsing the Internet for class work (12%). Twenty-six percent of teachers indicated that they did not have Internet access in their classrooms during English lessons.

Teachers reported using a range of strategies in English lessons to extend and refine their students' understanding of texts. The most common (those used in several or almost all lessons) were:

- Getting students to justify their opinions about texts (93%)
- Asking higher-order questions to challenge students (92%)
- Having students relate text information to their experiences outside school (85%)
- Enabling students to identify how a text builds on what they know already (88%).

Less widely-used strategies included:

- Asking students to discuss what they had read in pairs or groups (46%)
- Having students memorise as many details as possible (29%).

When items were grouped into scales dealing with discursive (e.g., asking higher-order questions), elaborative (e.g., linking text to real life) and memorisation reading strategies, teachers in girls' secondary schools were found to make significantly greater use of discursive strategies than teachers in both boys' secondary and community/comprehensive schools, and significantly greater use of elaborative strategies than teachers in boys' secondary schools. Teachers in girls' secondary schools reported the lowest level of use of memorisation strategies, although all teachers reported less frequent usage of memorisation strategies than other types of strategies.

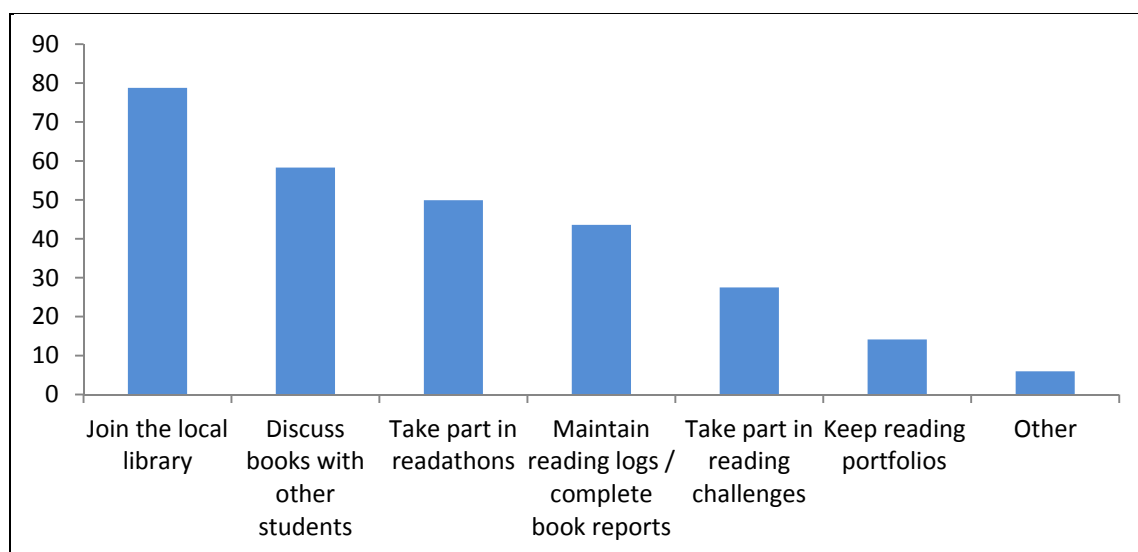
Activities to Promote Reading

Teachers reported relatively infrequent use of specified strategies to encourage students to read more widely, both during and outside of class time. The following strategies intended to promote reading during class time were used by teachers in several or all lessons:

- Encouraging students to borrow books from the library (47%)
- Recommending a book or author to read (47%)
- Encouraging Third Year students to recommend books to other students (29%)
- Reading the beginning or excerpts from an interesting book (26%).

In addition to reporting on use of the above activities to promote reading during English classes, teachers were asked about whether or not they encouraged students to engage in certain activities designed to promote reading outside of class time. The most widely-used strategy (used by 79% of teachers) was to encourage students to join the local library, while 58% encouraged students to discuss books with other students (Figure 8.2). Just 14% asked students to maintain reading portfolios. The disparity between the relatively high percentage of teachers who encouraged students to join a library (79%) and the lower percentage who encouraged students to borrow books (47%) (mentioned above) is noteworthy. The relatively low rates of library usage reported by the students themselves (Chapter 7, Figure 7.6) may also be noted.

Figure 8.2: Percentages of Teachers Using Various Strategies to Promote Reading Outside of English Class Time (Ireland 2009)

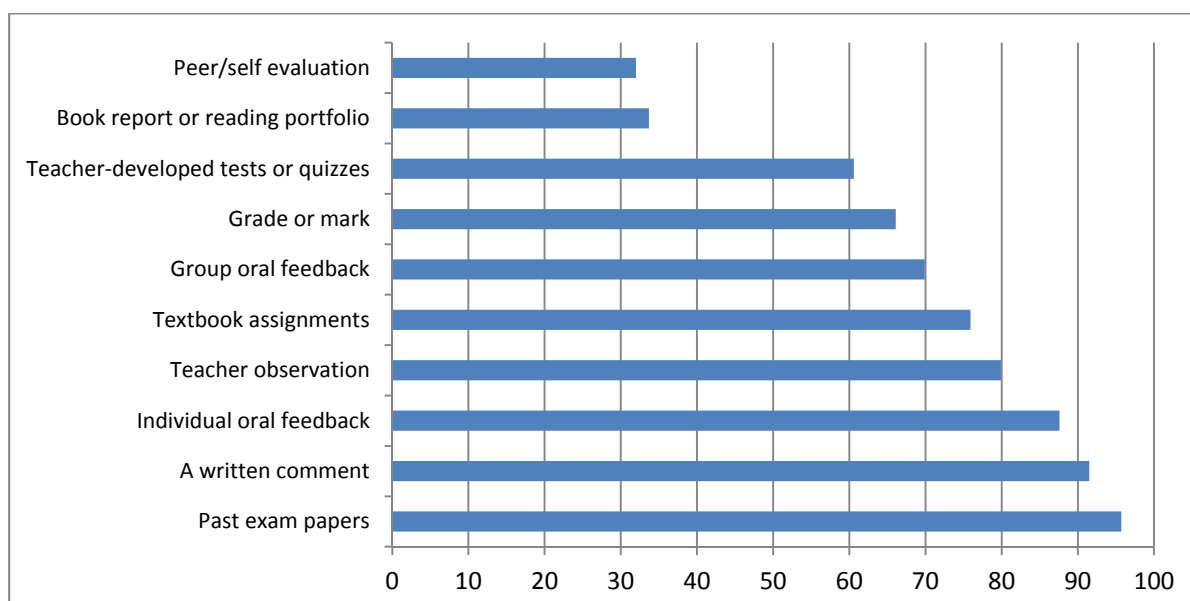


In general, activities to promote reading were used more widely in schools in the School Support Programme (SSP) under DEIS than in non-SSP schools. Girls' secondary schools and vocational schools were significantly more likely to implement strategies to promote reading than were community/comprehensive schools, mixed secondary schools and boys' secondary schools.

Assessment

Teachers reported using a variety of assessment strategies to assess Third Year students' English, with 96% using past examination papers in several or all lessons (Figure 8.3). Individual comments, individual oral feedback, and observations of students were used in several or all lessons by over 80% of teachers. Approximately one-third of teachers reported using book reports/reading portfolios or peer/self-evaluation. Almost 20% of teachers never used the former, and almost 30% never used the latter.

Figure 8.3: Percentages of Teachers Using Various Strategies in Several or All Lessons to Assess Third-year Students' English (Ireland 2009)



Teaching Literacy in English Classes

This section looks at how teachers differentiate reading instruction during English classes to accommodate the needs of less-able readers. In considering teachers' responses, it should be noted that reading ability levels vary between schools and between classes in schools. Hence, a teacher with few or no struggling readers might not need to implement strategies designed to accommodate lower-achieving students. Four issues are considered: teachers' use of differentiated strategy instruction, their grouping practices, their sense of responsibility for students with reading difficulties, and their self-assessed competence in teaching literacy.

Accommodations for Lower-Achieving Readers

Teachers were asked to indicate the extent to which they engaged in each of six approaches intended to support lower-achieving readers. The approaches endorsed most by teachers (they implemented them in their English classes in several or in almost all lessons) were:

- Allowing more time for slower readers to read texts than readers who were faster (69%)
- Giving special guidance to struggling readers while other students were doing assignments/projects (54%)
- Allowing time for silent reading at appropriate levels (54%)
- Giving strong readers more difficult assessments or homework than struggling readers (51%).

Strategies that were used less often were:

- Assigning homework to students on the basis of their individual needs and abilities (41%)
- Providing struggling readers with easier texts than stronger readers (38%).

A scale using these items was developed, with a national mean score of 0 and a standard deviation of 1. Teachers in SSP schools (mean = 0.19) indicated significantly greater differentiated strategy usage than their counterparts in non-SSP schools (-0.11). Usage was greatest among teachers in vocational schools (0.25) and lowest among teachers in girls' secondary schools (-0.31).

Teachers were asked to indicate how often they implemented strategies that might support lower-achieving readers in acquiring reading skills. For four of the five strategies (basic comprehension skills, spelling and grammar, oral/written vocabulary and higher-level comprehension skills), at least three-quarters of teachers reported implementation in several or most lessons. Just one in four teachers reported teaching the fifth strategy, basic decoding skills such as phonics or structural analysis, with the same frequency.

Grouping for Instruction

One organisational strategy that is commonly used to address learning differences in classroom settings is within-class grouping. Teachers were asked to indicate how often they implemented various grouping arrangements in their Third Year classes. The data need to be interpreted with respect to varying ability levels within classes (i.e., schools may have already grouped students into classes according to their ability). Across classes in the study, teachers reported that the following arrangements were implemented in several or almost all lessons:

- Whole-class teaching (all students were taught the same thing at the same time) (96%)
- Mixed-ability groups (heterogeneous groups) (51%)
- Individualised instruction (students work individually on assignments tailored to their needs) (31%)

- Paired instruction (students work in pairs on specific assignments) (31%)
- Ability grouping (the more proficient students in one group, the weaker students in another) (23%)
- Interest grouping (groups based on students' interests) (9%)
- Team teaching (working with another teacher in English classes) (6%).

Hence, apart from whole-class teaching, the most common forms of grouping are mixed-ability grouping and, to a significantly lesser extent, individualised instruction and paired instruction. Very little emphasis is placed on interest grouping or team teaching.

Teacher Responsibility for Addressing Literacy Difficulties

Teachers were also asked to indicate their agreement with a series of statements designed to establish their perceived level of responsibility for dealing with literacy difficulties. In interpreting teachers' responses, it should be noted that some teachers may have had few or no students in their classes with literacy difficulties, while others may have had several, or may have had a designated role within the school for dealing with literacy difficulties (e.g., teachers in the JCSP). The statements and the percentages of teachers indicating 'strong agreement' or 'agreement' are as follows:

- I take responsibility for addressing the learning needs of students with low levels of literacy in my English class (87%)
- I work with other members of the English Department as part of a team to address the literacy difficulties of students (81%)
- The teaching staff as a whole in this school takes an active and integrated approach to addressing the literacy needs of students (73%)
- I take responsibility for my own professional development in relation to addressing the needs of students with literacy difficulties (72%)
- Support and resource teachers are responsible mainly for addressing the literacy problems of students (37%)
- My primary role is to teach English literature, not literacy (21%).

From these responses, it can be seen that a majority of teachers view themselves as teachers of literacy as well as teachers of literature, and take responsibility, individually and collectively as staff members, to address this.

A scale summarising teachers' responsibility for addressing literacy needs, which was based on the first four items above, was constructed to have a mean of 0 and a standard deviation of 1. Teachers in schools in SSP under DEIS did not differ significantly from their non-SSP counterparts on the scale. Teachers in vocational schools reported the highest levels of responsibility for teaching literacy (0.16), while the lowest levels were reported by teachers in boys' secondary (-0.20) and girls' secondary schools (-0.14), although the difference between the latter groups was not significant.

Self-Assessed Competence in Teaching Literacy

Teachers also responded to a series of statements regarding their own competencies in relation to teaching literacy. The statements and the percentages of teachers indicating 'strong agreement' or 'agreement' are as follows:

- I understand how students develop basic literacy skills (69%)
- I have the necessary skills to address the literacy needs of all the students in my English classes (66%)

- I have the necessary skills to address the needs of students with low literacy levels in my English classes (61%)
- My pre-service teacher education has prepared me to differentiate my teaching of English, based on my students' literacy levels and needs (34%)
- I understand how students develop advanced literacy skills (69%).

With the exception of the statement on pre-service courses, about two-thirds of English teachers view themselves as competent in addressing students' literacy difficulties, with almost 70% reporting that they understand how students develop basic and advanced literacy skills.

On a scale of perceived competence in teaching literacy skills, consisting of the five items above, and set to a mean of 0 and a standard deviation of 1 at a national level, teachers in non-SSP schools (0.04) perceived themselves to be more competent in teaching literacy skills than their counterparts in SSP schools (-0.09), although this difference is not significant. Teachers in girls' secondary schools (-0.16) perceived themselves to be less competent in teaching literacy skills than their counterparts in other school types, though again differences are not significant.

Teachers' Professional Development

This section considers three related issues – teachers' engagement in professional and personal reading, the frequency with which they attended continuous professional development (CPD) courses, and their perceived CPD needs.

Teachers' Professional and Personal Reading

Eighty-nine percent of English teachers reported that they read articles on syllabus texts or examination materials at least once or twice a month, and 79% reported that they read articles on teaching and learning in general with the same frequency. In contrast, just 38% reported that they read articles on teaching literacy (implying that 62% never did so).

Teachers' personal reading spanned novels and short stories (71% read them at least weekly), literary commentary (64%) and non-fiction (56%). Fewer teachers reported reading poems (37%) or plays (20%) with the same frequency. Indeed, 34% reported never reading plays, and 19% never reading poetry.

Teachers' Participation in CPD

English teachers reported attending an average of 1.26 days of CPD relating to English (but not including courses related to a post-graduate degree) in the three years prior to PISA 2009 (Table 8.1). Teachers in schools in the SSP under DEIS attended 1.69 days on average, while teachers in non-SSP schools attended 1.09 days. English teachers in SSP schools attended 0.41 days related to the JCSP, compared with 0.13 days in non-SSP schools.

Table 8.1: Average Number of Days of Professional Development Attended by English Teachers in the Three Years Prior to PISA 2009, by Topic/Programme and SSP under DEIS Status (Ireland 2009)

Topic	All	SSP Under DEIS	Non-SSP
Junior Cert English Syllabus	0.20	0.21	0.19
JCSP	0.21	0.41	0.13
Other Aspects of English	0.85	1.07	0.77
Total	1.26	1.69	1.09

The overall picture is one in which teachers of English attend little or no professional development, especially those working in non-SSP schools.

Teachers were also asked why they did not attend CPD courses. A majority (59%) indicated lack of availability of suitable courses, while 30% cited lack of time outside of school hours (Table 8.2). There was some variation in responses across different types of schools. The location of courses was a particular problem for teachers in community/comprehensive schools, not being informed about courses for teachers in boys' secondary schools, lack of time during school hours for those in girls' secondary schools, and lack of time outside of school hours for those in mixed secondary schools.

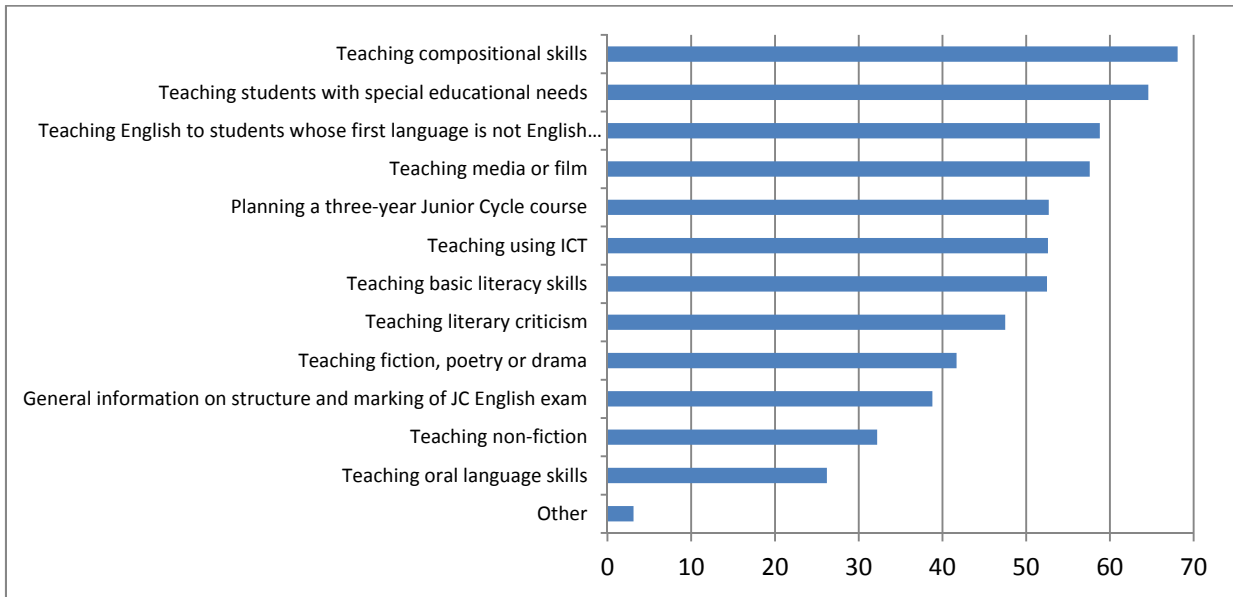
Table 8.2: Percentages of Teachers Indicating Various Reasons that Prevented Them from Attending CPD Courses Related to Their English Classes (All Teachers, 2009)

Reason:	%
Lack of availability of courses	59.0
Not being informed about courses	32.5
The location of courses	24.6
Lack of time during school hours	42.5
Lack of time outside of school hours	29.7
Other	3.3
Does not apply (i.e., nothing prevented me)	8.2

Teachers' Professional Development Needs

Teachers were asked to indicate, for each of several topics, which ones they would like to see covered in future CPD days. Their responses, summarised in Figure 8.4, indicate that a majority would like to see CPD in teaching compositional skills (68%), teaching students with special educational needs (65%), teaching English to students whose first language is not English/Irish (59%), teaching media/film (58%), planning a three-year Junior Cycle course (53%), teaching using ICT (53%), and teaching basic literacy skills (53%). Just over one-quarter of teachers (26%) indicated a need in the area of teaching oral language skills.

Figure 8.4: Percentages of English Teachers Indicating Need for CPD in Specified Topics (Ireland 2009)

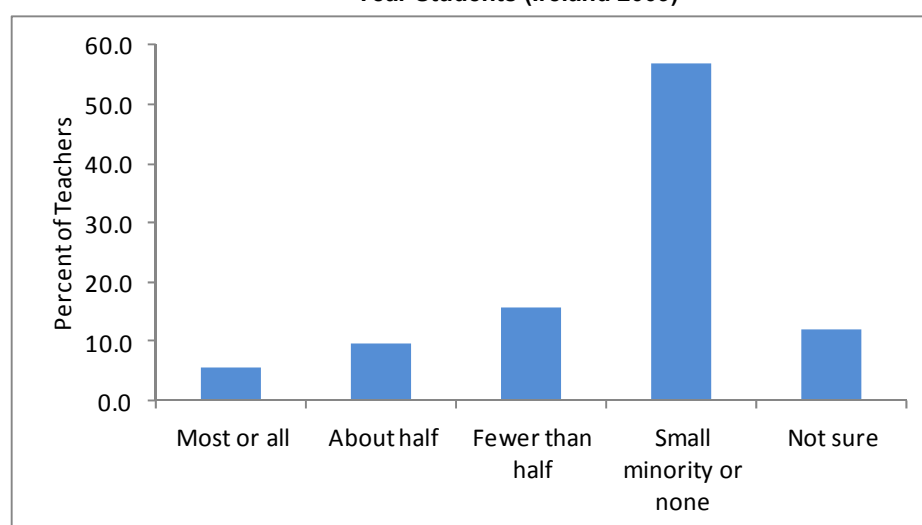


Higher proportions of teachers in SSP schools expressed an interest in in-career development related to teaching English to students whose first language is not English/Irish, teaching basic literacy skills, teaching compositional skills, and planning a three-year Junior Cycle course. The only topic in which non-SSP teachers showed a markedly higher level of interest was teaching media/film. Teaching compositional skills and teaching students with special educational needs were the first and second most popular choices across both SSP and non-SSP schools.

Library Usage

Forty-two percent of teachers reported that their school had a room that was used exclusively as a school library, while 46% said their school had a room that was used as a school library and also used for other purposes. Twenty-four percent said that there was a library in some classrooms in their schools. In schools with a school library, 69% of teachers described their school library as a lending library. The others (31%) said that their library was a reference library only. In schools with a school library, 44% of teachers said the library was available for use during class time, 62% said that it was available to students during lunchtime, and 29% that it was available before or after class time. In schools with a school library, just 15% of teachers believed that the school library was used by at least one half of Third Year students on a regular basis (Figure 8.5).

Figure 8.5: Percentages of English Teachers Indicating Frequency of Independent Library Usage by Third Year Students (Ireland 2009)*



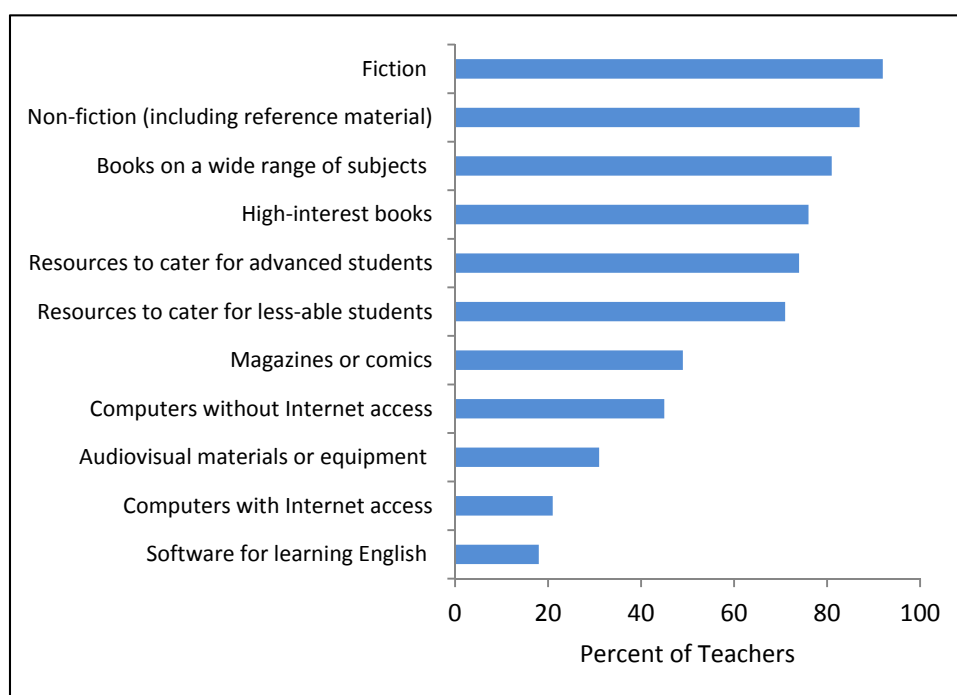
*Based on schools with school library

According to English teachers in schools with a library, libraries tended to contain a broad range of reading materials (Figure 8.6) – 92% of teachers indicated that their school library included fiction, while 87% indicated that it included non-fiction and 91% indicated that it included books on a wide range of subjects. Seventy-one percent reported availability of resources for less-able students. Just 20% of teachers reported the availability of computers with Internet access, while fewer than 20% reported the availability of software for learning aspects of English.

In schools with a library, 71% of Third Year English teachers reported that they hardly ever or never took their students to the library, 22% that they did so once or twice a month, 7% once a week, and less than one percent on a more frequent basis.

Among teachers in schools with a school library who took their students to the library at least once or twice a month (17% of teachers returning a questionnaire), 86% did so for leisure reading, 65% to choose books for reading outside of school time, 57% for writing a book report, 33% for reading related to coursework, 31% for research related to reference materials, and 2% for electronic reading (note that teachers could select as many responses as applied to them in answering this question).

Figure 8.6: Percentages of Teachers Reporting Availability of Various Resources in School Libraries (Ireland 2009)*



*Based on schools with school library

Chapter Highlights

As part of PISA 2009 in Ireland, teachers of Third Year English in participating schools completed a questionnaire about teaching and learning English.

The texts that teachers reported assigning to Third Year students most frequently were fiction, poetry and plays, while non-fiction, digital texts, and tables, graphs and diagrams were assigned less frequently.

The most frequently used comprehension activities were asking higher order questions to challenge students, and enabling students to identify how a text builds on what they already know. Fewer than half of teachers reported that they asked students to discuss what they had read in pairs or groups with the same frequency.

Whole-class teaching was the dominant approach to organising instruction, though half of the teachers reported that they grouped students into mixed-ability groups in several or almost all lessons. Paired instruction, ability grouping, interest grouping and team teaching were relatively uncommon.

Almost nine in 10 teachers indicated that they took responsibility for addressing the needs of students with low levels of literacy in their classes, though only six in 10 agreed that they had the skills to address the needs of such students.

This lack of competence reported by teachers with regard to teaching literacy is reflected in very low levels of CPD course attendance, with teachers reporting attending an average of just 1.3 days of CPD in English over the previous three years.

Teacher non-attendance of CPD was attributed to lack of availability of suitable courses, lack of information about courses, and lack of time both during and outside of school hours.

The activities that teachers reported using most frequently to promote reading during class time were encouraging students to borrow library books and recommending a book or author to read.

Almost nine in 10 teachers reported that their school had a school library. However, in schools with a library, just 15% of teachers believed that the school library was used independently by at least half of their Third Year students on a regular basis and 71% of teachers reported that they never, or hardly ever, took their students to the library.

Chapter 9: Summary, Conclusions and Recommendations

This chapter is divided into two sections. The first provides a summary of this report, while the second provides conclusions and recommendations for schools and teachers, though these recommendations are also relevant for other groups, such as school management bodies, school authorities, and subject teachers' associations. Other recommendations arising from PISA 2009 will appear in the full national report on PISA 2009, to be published in early 2012.

Summary

Overview

The OECD's Programme for International Assessment (PISA), an international assessment of the skills and knowledge of 15-year-olds in reading, mathematical and scientific literacy, takes place every three years. In each PISA cycle, there is one major domain and two or more minor domains. In 2000 and 2009, print reading literacy was the major domain, allowing for detailed comparisons between reading performance and attitudes towards reading across the two years. A new element of PISA 2009 was the assessment of digital reading literacy, which was undertaken in 19 countries, including Ireland. This assessment was administered to a sub-sample of students who also participated in the print assessment.

Performance on Print Literacy

PISA 2009 was administered in 65 countries. In Ireland, 144 schools and 3,937 students took part in the assessment of print literacy.

In PISA 2009, the average score of 15-year olds in Ireland on print reading literacy did not differ significantly from the average of students across OECD member countries. Ireland's mean score was almost one-third of a standard deviation lower than in 2000, and one-fifth of a standard deviation lower than in 2003. This change in performance between 2000 and 2009 was the largest across all countries that participated in PISA in both years.

Ireland had the same proportion of highly-skilled and poorly-performing readers in 2009 as was found on average across OECD countries in that year. The percentage of high-achieving students (those scoring at Level 5 or higher) in Ireland halved, from 14% to 7% between 2000 and 2009, while the percentage of low-achieving students (those scoring below Level 2) increased from 11% to 17%.

Female students in Ireland achieved a mean score that was about two-fifths of a standard deviation higher than the mean score for male students. While the performance of male and female students in Ireland dropped significantly since 2000, the drop was greater for males than for females.

The drop in Ireland's performance between 2000 and 2009 was uniform across the distribution of achievement, with high, average, and low-scoring students all achieving significantly lower scores in 2009, compared with 2000.

Despite the significant decline in the overall performance, students in Ireland showed relative strength in the Reflect and Evaluate subscale, scoring significantly above the OECD average in both 2000 and 2009. In 2009, performance was not significantly different from the corresponding OECD averages on the Access and Retrieve and Integrate and Interpret process subscales, and on the Continuous and Non-continuous text subscales.

A number of factors may have contributed to the drop in performance on print reading literacy. These include increases in the percentages of immigrant students (from 2% in 2000 to 8% in 2009), students who speak a language other than English or Irish at home (1% to 4%) (although these groups overlap), students with special educational needs in mainstream classes, and students who stay in school longer. Another factor that may be associated with the drop in performance in Ireland is lower engagement among students with the PISA test. Evidence for this comes from substantially higher numbers of missing responses when a set or 'block' of print reading items appeared at the end of a test booklet, compared with when this same block appeared at the beginning. Though performance in other countries also dropped when a block of items appeared at the end of a booklet, the drop was much higher in Ireland. Questions have also been raised about the suitability of the approach adopted by the OECD and its contractors to measuring change in performance over time in PISA and whether the decline in performance in Ireland may have been exaggerated (e.g., LaRoche & Cartwright, 2010). There is evidence that more very low-performing schools were in the PISA 2009 sample than in samples in earlier studies.

Performance on Digital Reading Literacy

Nineteen countries in PISA 2009, including Ireland, participated in an optional assessment of digital reading literacy. In Ireland, 139 schools and 1420 students took part. This assessment mimicked the look and feel of a web-based browsing environment. Students in Ireland achieved a mean score that was significantly higher than the average of participating OECD member states, ranking 8th of 19 countries. The gender difference for digital reading in Ireland was narrower than for print reading, yet was the third largest across participating countries. In Ireland, the percentage of top-performing students on digital reading literacy (8%) was the same as the average across OECD countries (8%), while the percentage of lower-achieving students in Ireland (12%) was below the corresponding OECD average (17%), indicating a relatively strong performance by lower-achievers in Ireland.

Similar to other countries participating in the assessment of digital reading, the extent and nature of the navigation strategies used by students in Ireland in the digital reading assessment were closely related to performance. The number of relevant pages visited was most strongly associated with performance, followed by the number of visits to relevant pages, and the overall number of pages visited.

Students in Ireland reported significantly higher levels of access to computers and the Internet, both at home and at school, compared with average access across OECD countries. However, students in Ireland reported below average levels of computer usage at home for schoolwork, computer usage at school, and computer usage at home for leisure purposes. Hence, although students in Ireland reported frequent engagement in home-computer activities such as chatting online and taking part in online discussions, they engaged relatively less often in reading emails, reading online news, using online reference materials, searching online for information about particular topics, and searching for practical information. Relative to the OECD average, students in Ireland expressed an average level of confidence in performing high-level ICT tasks (e.g., using databases, creating spreadsheets).

In Ireland, there was a strong association between performance on print and digital reading ($r = 0.82$), indicating that those who did well on one format also tended to do well on the other.

One reason why students in Ireland did relatively better on digital reading literacy than on print literacy may be their relatively higher levels of engagement with the digital reading literacy tasks (as reported by test administrators). Another may be that, since digital

reading literacy was assessed for the first time in 2009, the estimation of student performance on digital reading was not constrained by some of the technical issues associated with the scaling of performance on print reading, which was linked back to 2000 (see Chapter 4).

In 2012, it is planned to extend the PISA assessment by including digital mathematics and problem solving, as well as digital reading alongside print assessments of mathematics, science and reading. This development marks efforts to move towards future assessments of PISA that are largely or entirely electronic.

Student and School Characteristics Related to Reading

In Ireland, both student and school socioeconomic background are positively associated with print and digital reading achievement, although differences in achievement between students from high and low socioeconomic backgrounds (at both student and school levels) are less pronounced for digital than for print reading. While students in the low (bottom third) and average (middle third) categories of the PISA index of economic and social status (ESCS) performed significantly better on digital than on print reading, students in the high ESCS category (top third) performed at about the same level on both types of reading.

Students in Transition Year achieved the highest mean scores for both print and digital reading literacy, followed by students in Fifth Year, Third Year and Second Year, with students at all year levels doing better on digital reading literacy, though at Second Year the difference was not statistically significant. An increase in the percentage of students in Transition Year, from 16% in 2000 to 24% in 2009, was noted, together with a drop from 19% in Fifth Year in 2000 to 14% in 2009.

Students attending girls' secondary schools in Ireland obtained mean scores on print and digital reading literacy that were significantly higher than those of students attending boys' secondary, mixed secondary, community/comprehensive and vocational schools. The mean digital reading scores of students in community/comprehensive and vocational schools were significantly higher than their mean scores on print reading. Digital reading literacy scores in other school types were higher than print reading scores, but differences were not statistically significant.

Weak to moderate positive correlations were found between reading literacy (both print and digital) and students' perceptions of the quality of their relations with teachers (student-teacher relations), the disciplinary climate in their English classes, and the perceived relevance of schooling.

Student Engagement with Print and Digital Texts

In 2009, 42% of students in Ireland reported that they did not read at all for enjoyment, 26% that they read for up to 30 minutes per day, 16% that they read for 31-60 minutes, and 16% that they read for at least one hour. Those reading for 31-60 minutes had a higher mean score in print reading literacy than those who read for 30 minutes or less, and those who did not read at all. The mean score difference between those who read for 31-60 minutes, and those who read for more than one hour was not statistically significant, suggesting that there are no additional benefits in terms of reading achievement to be had from increasing reading time beyond one hour per day. Female students in Ireland reported greater levels of reading for enjoyment than their male counterparts.

The print texts most frequently read by students in Ireland (at least several times monthly) were newspapers (68%), magazines (57%), fiction (30%), non-fiction (16%), and comics (8%). While frequent reading of both fiction and non-fiction texts was associated with higher reading achievement, frequent reading of comics and newspapers was associated with

lower achievement. On an index of the diversity or range of print materials read (mainly outside of school time), students in Ireland had a score that was significantly below the OECD average. It was also found that the diversity scale was positively associated with reading achievement (i.e., reading a more diverse set of materials was more strongly associated with reading achievement than reading of a less diverse set).

Between 2000 and 2009, the percentage of students in Ireland who did not read for enjoyment increased from 33% to 42%. The corresponding average increase across OECD countries was smaller than in Ireland, from 31% to 36%. In both years, the percentage of boys who did not read for enjoyment was higher than the percentage of girls, both in Ireland and on average across OECD countries.

The online reading activities in which students in Ireland engaged most frequently were chatting online and reading e-mails. Fewer students in Ireland than on average across OECD countries indicated weekly engagement in activities such as using online reference materials, searching online for information to learn about a particular topic, reading online news and searching online for practical information. In Ireland, more females than males reported reading e-mails and chatting online, while more males than females reported searching online for information about a topic and searching for practical information. Students in Ireland had a mean score that was one-half of a standard deviation below the OECD average on diversity of online materials read, and within Ireland, students reading a broader range of online materials had a higher average reading literacy score than students reading a narrower range.

Students in Ireland reported a lower level of enjoyment of reading than on average across OECD countries, with male students enjoying reading to a lesser degree than females. There was a positive association between enjoyment of reading and performance on both print literacy and digital reading literacy. In 2009, female students reported a significantly lower level of enjoyment of reading than their counterparts in 2000. For male students in Ireland, the difference between the two years was not statistically significant.

Students in Ireland had mean scores that were above the corresponding OECD averages on scales based on items that assessed awareness of reading strategies in two areas: understanding and remembering, and summarising information. Students in Ireland with high levels of awareness had higher achievement than those with lower levels. Irish female students had higher mean scores on both strategy sets than Irish male students.

Teaching English to Third Year Students

A questionnaire administered to teachers in Ireland as part of PISA 2009 focused on the teaching of English to Third Year students. The text types most frequently assigned by English teachers were fiction, poetry and plays. Forms, digital texts and texts with tables, graphs and diagrams were assigned infrequently. The most common computer-based activities in which teachers engaged students were browsing the Internet for class work, writing an essay/paper, reading stories or other texts, and drill and practice activities. However, none of these was implemented in several or all lessons by more than one in eight teachers.

Reading strategies commonly used by teachers to refine and extend their students' understanding of text included getting students to justify their opinion about texts, asking higher-order questions to challenge students, and having students relate text information to their experiences outside of school. Less-widely used strategies included discussion in pairs and having students memorise details.

The assessment strategies most widely implemented by teachers were administering past examination papers, writing individual comments, providing individual oral feedback, and observing students. Strategies used less often included book reports/reading portfolios and peer/self-evaluation.

Whole class grouping was the dominant way in which students were organised for English instruction, though one-half of teachers indicated that they also used mixed-ability grouping in several or almost all lessons. Approaches to grouping that were used infrequently were individualised instruction, paired instruction, grouping by ability, interest grouping and team teaching.

Although 87% of teachers strongly agreed or agreed that they took responsibility for the learning needs of students with low levels of literacy in their English classes, just three-quarters agreed that the teaching staff as a whole took an active and integrated approach to addressing the literacy needs of students, or that they took responsibility for their own professional development in relation to addressing the needs of students with literacy difficulties. Only one in five saw their primary role as a teacher of English literature rather than as a teacher of English literacy. Seven in ten teachers agreed that they understood how students develop basic literacy skills, while two thirds agreed that they had the skills to address the literacy needs of all of the students in their English classes. Three in five agreed that they had the necessary skills to address the needs of students with low levels of literacy in their English classes.

Nine in ten English teachers said that they read articles on syllabus texts or examination materials at least monthly. In contrast, just one in four reported reading articles on teaching literacy with the same frequency.

Teachers reported that they had attended an average of one-and-a-quarter days of professional development in English in the three years prior to PISA 2009, with attendance greater in SSP than in non-SSP schools. Lack of suitable CPD courses was cited by three in five teachers. The topics in which teachers expressed the greatest need for CPD included teaching compositional skills, teaching students with special educational needs, teaching English to non-English/Irish speakers, teaching media/film, teaching the three-year JC course, teaching ICT skills, and teaching basic literacy skills.

Almost nine in ten schools had a school library that functioned exclusively as a library, or that was also used for other purposes. In schools with a library, just 15% of teachers reported that at least one-half of Third Year students used it on a regular basis and 71% of teachers reported that they never or hardly ever took their students to the library. This finding may be interpreted with reference to the relatively low levels of enjoyment of reading and diversity of texts read by students in Ireland noted earlier.

There were differences across school types on some of the scales that were constructed using teacher questionnaire items. For example, teachers in girls' secondary schools had higher scores on scales describing teachers' use of discursive and elaborative reading strategies in English lessons, compared with teachers in boys' secondary schools. Teachers in schools in SSP under DEIS were more likely to report that they used a range of strategies to promote reading among pupils, and that they used more differentiated strategies to support lower-achieving students, compared with teachers in non-SSP schools. On average, teachers in SSP schools attended more CPD days (1.69 days) in the three years prior to PISA 2009 than teachers in non-SSP schools (1.09 days). Overall, however, participation by English teachers in CPD was low.

Conclusions and Recommendations

In this section, we draw conclusions and offer recommendations based on the outcomes of PISA 2009 and the survey of English teachers, as outlined in this report. Our recommendations refer to lower post-primary schooling (i.e., First to Third Years), though most are also of relevance to upper secondary (Senior Cycle). Almost all of our recommendations refer to English classes since that was the focus of PISA 2009 and of our survey of teachers. However, many of the recommendations are also applicable to other subject areas as well.

Raising Literacy Levels in English and Across the Curriculum

As noted in Chapter 4, there are a number of reasons why performance on print reading in Ireland was lower in PISA 2009 than in PISA 2000. These include: changes in the school-going population, with, for example, more students for whom English/Irish was not the main language spoken at home; survey fatigue/disengagement from the PISA test, with a marked increase in the proportion of students in Ireland who skipped questions when they appeared later in the test booklets; and random sampling fluctuation, with more very low-performing schools in the 2009 sample, compared with earlier PISA cycles. Factors such as the linking and scaling methodology used in PISA may also have led to an over-estimate of the change in performance. Nevertheless, it is clear that there has been a decline in performance since 2000 and that actions need to be taken to address this.

Of particular concern is the performance of high achievers, with just 7% achieving at or above Level 5 on print reading in 2009, compared with 14% in 2000. Even on digital reading literacy, where students in Ireland performed well overall, the percentage achieving at Level 5 or higher (8%) is not significantly different from the OECD average (also 8%). A related concern is the number of students achieving at or below Level 1 on print reading literacy, which also increased among both males and females since 2000.

Future revisions to the JC English syllabus, outlined in *The National Strategy to Improve Literacy and Numeracy* (DES, 2011), may go some way towards increasing performance among readers at all levels of ability. According to the Strategy, areas on which teaching and assessment will focus more closely in the future include oral and aural skills, vocabulary development, fluency, reading comprehension strategies, and functional and structural aspects of language. Students will also be expected to read a broader range of texts, with a better balance between literary and non-literary texts, and greater use of digital texts. Since the Strategy indicates that a revised JC English Syllabus will not be completed until 2014 (and therefore not examined until 2017), it would seem important for schools and teachers to become familiar with and begin to implement new strategies for addressing the literacy needs of both high- and low-achieving students well before then. This, however, may need to be supported through the availability of a wider range of curricular materials since standard textbooks are not suitable for the full range of literacies in schools (e.g. DES, 2005b).

A stronger focus on literacy skills across the range of subjects (disciplines) that students study at JC level, as proposed in *The National Strategy*, could also help in improving the performance of higher-achieving readers. However, dissemination of best practice to all teachers, as well as its implementation, poses significant challenges. Kamil et al. (2008) have identified five broad strategies that can be used to teach disciplinary literacy, and are also relevant for teaching literacy skills in English classes:

- *Subject-specific vocabulary instruction.* Such instruction includes teaching specialised vocabulary, and discipline-related concepts that students may not

encounter outside of their textbooks. Vocabulary instruction can be direct (e.g., helping students to look up definitions) or indirect (e.g., encouraging students to identify the meaning of a word by using prior knowledge and the context in which the word is embedded). A general principle is that vocabulary instruction needs to be 'deep' (i.e., repeated encounters with words in multiple contexts should be provided) if it is to lead to improved comprehension of text as well as enhanced vocabulary. A strong emphasis on vocabulary development is consistent with advice offered in the Irish context on teaching key vocabulary words (keywords) in both English and in subject area lessons (see Cassidy & Kiely, 2001). Pre-teaching keywords can ensure that students construct a stronger understanding of the texts they read. It also promotes word consciousness (e.g., that some words have multiple meanings) and attention to the structural parts of words. Cassidy and Kiely also emphasise that understanding of keywords can be promoted through wide reading of texts that include targeted keywords, the use of visual links to word meaning, and the use of keywords in oral language.

- *Direct and explicit strategy instruction.* The specific text structures, stylistic conventions and modes of analysis and debate that are unique to particular subjects should be integrated into subject lessons so that the relevant rules, skills and conventions are apparent to students. Strategies are routines and procedures that readers use to help them to make sense of texts. They include summarising, asking and answering questions, paraphrasing, identifying main ideas and developing graphic organisers (diagrams reflecting the structure of a text). The use of writing frames also supports the development of writing skills in a variety of genres.
- *Extended discussion of text meaning and interpretation.* Extended discussion can occur in class groups or in small collaborative learning groups under the guidance of the teacher. Such discussion focuses on building a deeper understanding of the author's meaning or critically analysing and challenging the author's conclusions through reasoning or applying personal experience and knowledge. Students present and defend individual interpretations and points of view. Discussions do not always need to reach consensus. It is more important that students reason and think deeply about the meaning of the text.
- *Increased motivation and engagement in literacy learning.* Motivation and engagement can be enhanced by implementing strategies to help students to build confidence in their ability to comprehend and learn from content-area texts. A key approach to enhancing engagement is to ensure that students' have clear goals and expectations as they undertake a task, and that they develop a level of control over their own learning so that they can monitor how well they are doing on a task. Feedback refers to the usefulness of reading strategies and how they can be modified to fit task requirements.
- *Intensive and individualised interventions for struggling readers that can be provided by trained specialists.* This strategy recognises that some students will need additional intensive support if they are to accelerate their reading development. Depending on a student's needs, such support may focus on fundamental skills such as phonemic awareness, phonemic decoding, and other word analysis skills that support word-reading accuracy; text-reading fluency; strategies for building vocabulary; strategies for understanding and using the specific textual features that distinguish different genres; and self-regulated use of reading comprehension strategies. Ideally, such instruction should be integrated with students' subject-area reading.

The range of texts with which students in Junior Cycle English classes interact is limited, with a particularly strong focus on fiction and plays, and less attention to non-literary texts such as argumentative texts, advertisements, and texts that include tables, graphs and diagrams (see Chapter 8). One way of addressing this problem is to broaden the range of texts used in English classes. *The National Strategy for Improving Literacy and Numeracy* envisages that this will happen in the context of a revised Junior Certificate English syllabus, though this work will not be completed until 2014. In the meantime, it would seem important for teachers of all subject areas, including English, to focus in a very definite way on supporting students' understanding of the texts that they encounter in different subject areas (for example, by providing direct, explicit instruction in relation to vocabulary and text structure, and engaging students in small-group discussion on the texts they read). Over time, this support should extend to digital texts. Strategy instruction should be designed to include teacher explanation of the strategy, modelling by the teacher, and gradual release of responsibility for implementing the strategy to students (see Duke & Pearson, 2002).

In considering ways in which to improve students' literacy levels across the curriculum, it would seem important for teachers of English, as well as teachers of other subjects, to assume joint responsibility for literacy instruction. It is a matter of concern that over one-third of English teachers responding to our questionnaire agreed that 'support and resource teachers are mainly responsible for addressing the literacy problems of students'. There is a need for all teachers to take responsibility for addressing students' literacy difficulties, to ensure that all students reach their potential.

Work completed in the context of the Junior Certificate School Programme (JCSP) that identifies and describes ways in which to improve the teaching of literacy across subject areas may also be of relevance to schools that are not in the JCSP. For example, the booklet *Resources for Developing a School-wide Literacy Plan* (JCSP Support Service, 2008) provides a template that all schools can use as a basis for developing a whole-school plan to integrate literacy instruction across the curriculum.

Recommendations

- R1. Schools and teachers should become familiar with, and begin to implement, a range of strategies for improving literacy across the curriculum, including in English classes. Instruction should focus on teaching subject-specific vocabulary (keywords), providing a range of strategies for understanding text, involving students in extended discussion of text meaning and interpretation, and increasing motivation and engagement. Instructional materials should be selected and adapted to suit particular teaching and learning contexts.
- R2. Teachers of English and other subject areas should support students' comprehension of the texts that they encounter in class – both literary and non-literary – by providing direct instruction in strategies for reading comprehension. Over time, this support should extend to digital texts.
- R3. Teachers providing instruction to support students' comprehension of literary and non-literary texts should implement a gradual-release-of-responsibility model, whereby students are strongly supported in the early stages of learning a new strategy, and support is gradually withdrawn as students understand when and how to implement the strategy.

- R4. English teachers, support teachers and teachers of other subjects should take joint responsibility for addressing the learning needs of students with literacy difficulties by planning and implementing whole-school approaches.

Extending Students' Digital Reading Literacy Skills

Students in Ireland did relatively better on digital reading literacy than on print reading in PISA 2009, though this was driven to some extent by the strong performance of lower-achieving readers. High achievers performed at about the same level on both print and digital reading. The above-OECD average performance of students in Ireland is perhaps surprising in light of the low levels of engagement on digital reading literacy tasks. As noted earlier, students in Ireland had quite low mean scores on indices measuring computer use at home for schoolwork and computer use at school. On the one hand, students in Ireland need to engage in higher-level digital reading tasks, such as searching online for information, using online reference materials, and searching for practical information online, as such tasks are clearly important for their future lives and future learning. On the other hand, since digital texts do not feature on the current Junior Certificate English examination, there may be little obvious incentive for teachers or students to increase their engagement with such texts. Yet, with appropriate guidance, digital texts could provide students at all ability levels with another avenue to literacy. Further, it is clear from the *National Strategy for Literacy and Numeracy* (DES, 2011) that digital literacy will play an increasingly important role in instruction and assessment in the future.

While the relationship between computer use and achievement on the digital reading literacy assessment has not yet been fully specified, it has been argued that reading online texts requires specialised reading strategies such as constantly evaluating the relevance of information in relation to the question to be answered (e.g., Leu et al., 2008). Therefore it seems important that students are supported in applying such skills.

According to Casey et al. (2009), the following activities could be used to promote print literacy skills as students engage with digital texts:

- Opportunities for extensive reading and writing can be integrated into digital reading literacy activities (for example, students can engage in extensive background reading around a new topic or write an account of what they have done).
- For each digital reading literacy activity, 5-6 key vocabulary words or phrases can be selected, taught to students, and reviewed on an ongoing basis.
- In developing reading comprehension in digital environments, opportunities for guided reading practice can be provided, where comprehension strategies are modelled by the teacher, and students are expected to explain the strategies that they used and why they used these strategies.
- Students can respond to reading using a range of electronic media, including blogs.
- The sense of audience that digital texts provide can be exploited – students can be encouraged to pay stronger attention to issues of syntax, vocabulary, mechanics, and structure in their writing, if they know that their work will be read by others.
- When students engage in digital literacies, they can be encouraged to describe what they are doing, and how they can use what they have learned in other contexts (e.g., in dealing with print literacies).

Recommendations

- R5. Schools and teachers should provide a broader range of opportunities for students to engage with digital texts, and such engagement should occur across a range of contexts, including schoolwork and homework in English and in other subject areas.

- R6. Teachers of English and other subject areas should support students in identifying similarities and differences between reading print and digital texts.
- R7. Teachers of English and other subject areas should ensure that students can apply both basic reading skills (e.g., understanding and remembering, summarising and integrating information) and critical reading skills (e.g., identifying the source and relevance of texts) as they read digital texts.

Addressing Gender Differences

The underperformance of males relative to females in Ireland and in all OECD countries on both print and digital reading is a matter of concern. In Ireland, females had a mean score on reading literacy in PISA 2009 that was two-fifths of a standard deviation higher than that of males. Further, the drop in the mean score of male students in Ireland on reading literacy between 2000 and 2009 was greater than the drop for female students, indicating a widening gender gap. Boys in Ireland in PISA 2009 had one of the lowest scores across all participating countries on a measure of enjoyment of reading print texts.

In reflecting on gender differences, and considering ways in which they might be reduced, there is a risk of assuming that all females have high achievement in literacy, and all males have low achievement. However, this is clearly not the case. On PISA 2009 reading literacy, 23% of boys in Ireland scored at or below Level 1, while 11% of females did so.

There is also a danger in interpreting gender differences solely in terms of biological sex differences (the ‘essentialist’ perspective), and without reference to a range of other factors that interact with gender, including socioeconomic status, ethnicity, sexuality and geographical location (Martino & Kehler, 2007). More male than female students are disengaged with schooling generally (e.g., Joint Oireachtas Committee on Education and Skills, 2010), with low performance on reading literacy just one symptom of this issue.

According to *The National Strategy for Improving Literacy and Numeracy* (DES, 2011),

A lack of opportunity to engage with non-literary texts and other texts in which boys tend to show interest has an adverse impact on the participation and achievement of boys. We need to ensure that the syllabuses in both English and Irish require greater engagement by all students, including boys, with a broader range of texts (p. 51).

The Strategy is correct in advising that all students should have access to a broad range of texts that are of interest to them. To this end, it seems important that the students themselves (particularly boys) are consulted about their actual and potential reading interests. However, it is unlikely that engagement by students with a broader range of texts, even texts that are particularly interesting to them, will, in and of itself, bridge the gap in performance between male and female students. It will be necessary to go further than this, by directing the attention of teachers and students to the ways in which gender (as distinct from biological sex) is constructed socially, both in and out of school, how this impacts on students’ own lives and is endorsed by others, and how gender is portrayed across subjects and texts. According to Francis and Skelton (2005), research ‘has shown conclusively that it is in schools where gender constructions are less accentuated boys tend to produce higher attainment’ (p. 148).

Thus, changes to the ways in which students and their teachers approach and interpret texts, and not just the content or structure of the texts themselves, are important. Critical

literacy has become a well-respected approach to teaching English to students in some English-speaking countries, including Canada, Australia, New Zealand, and the UK. At the heart of critical literacy is the belief that while literacy enables students to make meaning from texts, critical literacy empowers them to understand how texts are trying to influence and change them as members of society. Implications for teaching that arise from critical literacy theory include reading texts from a ‘resistant perspective’, whereby the reader confronts certain stereotypes promoted by a text and deconstructs the meaning or value being privileged (Behrman, 2006) and producing (writing) counter texts (i.e., texts that are written from a non-mainstream perspective) (see Luke, 2000, who embeds critical literacy within the broader context of reading). This approach seems particularly relevant to addressing the gender gap in reading achievement, whilst at the same time offering opportunities to approach texts critically on the basis of other individual differences, including race and social class. According to Murphy (2009), this approach celebrates the diverse ways in which masculinity and femininity can be experienced and negotiated within school or societal settings. It acknowledges that literacy lessons and texts contribute to reproducing gendered norms, and that such norms can be constructed, validated or challenged by literacy activity. Learners move in and out of traditional and non-traditional performances of gender to understand the relationship between literacy, context and gender.

Finally, as suggested in the report on early school leaving by the Joint Oireachtas Committee on Education and Skills (2010) and elsewhere (Smyth, Dunne, McCoy, & Darmody, 2006), schools may want to look at addressing organisational practices that may accentuate gender differences in achievement and disengagement from school. Streaming of students was identified by the report as one such practice, since lower-SES boys are over-represented in ‘bottom’ streams. The report by the Joint Oireachtas Committee on Education and Skills suggested that streaming in First and Second Years in particular might be discontinued.

Recommendations

- R8. Schools and teachers should ensure that all male and female students have access to a wide range of texts and text type for English and other subjects that meet their needs and interests.
- R9. Schools and teachers should support students in identifying ways in which gender is socially constructed, both inside and outside of school. They should consider how this impacts on the lives of their students, how gender is enacted in the texts that students read in different subject areas, including English, and how such texts are relevant in real life.
- R10. Schools should examine how practices such as streaming can accentuate gender differences associated with achievement, engagement in reading, and engagement in school more generally, and identify ways in which the negative effects of such practices can be limited.

Strengthening Reading Engagement and Strategy Usage

PISA 2009 confirmed the strong association between frequency of reading print texts for enjoyment and print reading performance, with more frequent readers achieving higher average scores. It is a cause of concern that there has been a drop since 2000 in the proportion of students in Ireland reporting that they read for enjoyment, with 67% reporting that they did

so in 2000 and 58% in 2009. Enjoyment of reading was also found to be associated with achievement, with students who reported that they enjoyed reading and activities associated with reading (e.g., talking with other people about books) outperforming those who did not. Existing research provides strong support for the effectiveness of voluntary reading in enhancing comprehension, writing style, spelling, vocabulary and grammar (Krashen, 2004).

Two strategy sets measured by PISA (i.e., understanding and remembering texts, summarising texts) were significantly associated with reading performance on print and digital texts for students in Ireland. While some students can be expected to develop these and other strategy sets without conscious effort, others may require support in identifying relevant strategies and learning when they should be applied.

Several of the reading engagement and strategy usage measures in PISA were also associated with socioeconomic status and gender. PISA 2000 showed that highly-engaged students from low-SES backgrounds had higher average reading scores than high-SES students with low engagement in reading and medium-SES students with high or average engagement (Kirsch et al., 2002). It was noted earlier that, on average, male students in Ireland in PISA 2009 had lower average reading performance, lower levels of reading engagement, and lower levels of enjoyment of reading than females. Therefore, it is not surprising that proposals to bridge achievement gaps between high- and low-SES students (e.g., Kirsch et al., 2002), and between female and male students (e.g., Smith & Wilhelm, 2009) include a focus on enhancing engagement in reading.

Students who are intrinsically motivated to read for knowledge and enjoyment can be described as engaged readers. Motivation, a key aspect of engagement, decreases as students move through their schooling (Guthrie & Wigfield, 2000). A shift from intrinsic motivation (e.g., reading for enjoyment) to extrinsic motivation (e.g., reading to achieve high grades) may also occur. This underlines the need to ensure strong levels of engagement in reading literacy among students in Junior Cycle.

In an international context, the promotion of strategies to enhance engagement in reading has been emphasised recently by the European Commission in its report on teaching reading in Europe (EACEA, 2011). It is unlikely that engagement in reading can be enhanced by a single measure or initiative. Rather, several initiatives must be put in place at the same time and must be sustained over time. According to Guthrie and Wigfield (2000), the following can support higher engagement:

- Co-development of learning goals by teacher and students.
- Linking text content to real-life experiences and issues.
- Supporting students in making choices among meaningful alternatives in texts and tasks.
- Matching a broad range of texts (including non-traditional texts such as graphic novels and digital texts) to students' reading levels and interests.
- Modelling of reading comprehension strategies by the teacher.
- Providing opportunities for collaborative learning and discussion among students (e.g., small group activities).

While almost 90% of teachers responding to our questionnaire reported that their school had a library, fewer than three in ten of these teachers reported bringing their Third Year English classes to the library at least once or twice a month. This suggests under-usage of the school library as a learning resource for English classes, and as a source of motivation for engaging students in more independent reading and reading-related activities. This is something schools could address through more careful planning.

Finally, the important role of parents in supporting and developing their children's engagement with reading should not be underestimated; however, this issue is not a focus of the present report.

Recommendations

- R11. Schools and teachers should seek to further enhance students' engagement in literacy in all subject areas by providing a range of relevant supports. These should include co-development of learning goals, linking text content to real-life experiences and issues, supporting students in making choices among meaningful alternatives, matching a broad range of texts to students' reading needs and interests, and providing opportunities for collaborative learning around texts and their interpretation.
- R12. Schools and teachers should encourage greater levels of engagement with activities such as library usage, readathons, paired and peer reading, and book clubs during the teaching and learning of English as well as of other subjects. One way to achieve this is by linking school and homework tasks to specific library resources and concurrent reading-related activities. Efforts to enhance engagement in reading and literacy activities should be supported by allocating dedicated time, both in school and during homework, to reading and reading-related activities.
- R13. School plans should include reference to developing a culture of reading that incorporates access to books, time for reading, interventions that motivate adolescent reading and classroom strategies to support purposeful independent reading.

Engaging Students in their Own Assessment

Teachers of English in our survey reported engaging in a narrow range of assessment strategies in Third Year English classes. The most frequently used strategies were administering past examination papers, providing feedback through oral and written comments, engaging in teacher observations, and drawing inferences about progress based on textbook assignments. Other assessment strategies, such as use of book reports or reading portfolios as sources of assessment information, or peer/self evaluation, were used much less frequently. This latter finding may be symptomatic of the influence of the State Examinations on teachers' assessment strategies.

Currently, the Junior Certificate examination in English and in other subject areas is under review, and it is likely that, in the future, up to 40% of students' grades will be based on class assessments. This may provide teachers with an opportunity to broaden the range of assessments in which students are directly involved, while also increasing their engagement in reading and related activities (e.g., writing a personal or group response to a text). It may be noted that *The National Strategy for Improving Literacy and Numeracy* (DES, 2011) has as one of its objectives the improvement of the availability of national assessment data on literacy, recommending that standardised tests should be administered to all students at the end of Second Year, beginning in 2015.

While new assessment arrangements at Junior Certificate level may allow for more flexibility in schools' and teachers' uses of assessment, schools and teachers could begin to involve students more often in their own assessment at this time. Among the activities relevant to this work (see Nitko & Brookhart, 2011) are:

- Involving students in identifying assessment targets
- Identifying suitable assessment tools

- Designing portfolios
- Working with students to develop rating scales and scoring rubrics
- Establishing protocols for assessing own and other students' work

Recommendations

R14. Teachers of English and other subjects should incorporate assessment activities in which students are actively involved, with a view to improving engagement in the learning and assessment processes.

Enhancing CPD for Teachers

The relatively low engagement of teachers with continuous professional development (CPD) courses is a matter of concern, with teachers attending an average of just 1.3 days on the teaching of English in the three years preceding PISA 2009. This finding is in line with the OECD Teaching and Learning International Survey (TALIS; Gilleece, Shiel, Perkins & Proctor, 2009), which showed that, on average, teachers in Ireland attended fewer days of professional development in the 18 months prior to the survey than their counterparts in any of the other 22 participating countries.

It is difficult to see how teachers can add to their repertoire of teaching strategies and better address the literacy needs of struggling readers without adequate input, including support with whole school planning that emphasises how to address students' literacy difficulties and how to increase students' engagement with literacy. The lack of ongoing CPD is reflected in the broad range of topics on which teachers in the current study say that they need support, including teaching compositional skills, teaching students with special educational needs, teaching English to non-English/Irish speakers, teaching media/film, teaching a three-year JC course, teaching ICT skills, and teaching basic literacy skills. Appropriate CPD is also regarded as critical in ensuring that teachers develop the skills to integrate relevant literacy instruction into the subject areas that they teach. This view is reflected in *The National Strategy to Improve Literacy and Numeracy* (DES, 2011, pp. 36-37), where the actions include:

- Providing access to approved, high-quality professional development courses of at least 20 hours in duration in literacy, numeracy and assessment every five years for teachers of L1 (English/Irish) at second level (as an element of CPD that teachers require to maintain their professional skill)
- Providing access to approved professional development units on literacy and numeracy across the curriculum for second-level teachers.

According to *The National Strategy*, it is intended to launch both forms of CPD in 2011-12, with extended provision from 2012-13.

It would seem important for individual schools to follow up on this CPD by grouping teachers by subject area to plan the implementation of new strategies and approaches to integrating literacy across the curriculum, whilst at the same time capitalising on the existing expertise and qualifications of teachers within the system (see, for example, www.inote.ie). According to Shanahan and Shanahan (2008), many literacy strategies are discipline-specific – they represent specific ways of interpreting texts or information in a particular subject area. The application by teachers of generic literacy strategies across subject areas could result in a duplication of effort across classrooms, detract from efforts to support students in acquiring subject-specific content, and confuse students. Therefore, it would seem important for schools to group teachers by subject area so that teachers can (i) identify the strategies that

they want to focus on in specific subjects or clusters of subjects; and (ii) plan a phased introduction of the new strategies, using appropriate instructional models.

Recommendations

- R15. Following national CPD in literacy and related areas, schools should group teachers by subject area or other appropriate means to actively plan the phased introduction of new strategies and skills to engage students in reading more widely and in understanding texts more deeply. Schools should also ensure that the implementation of new strategies is evaluated on a regular basis.
- R16. CPD for teachers, whether provided by the DES and its agencies, by accredited organisations, or by schools, should address areas of literacy that teachers have identified as being priority areas for them, including teaching compositional skills, teaching students with special educational needs, teaching English to non-English/Irish speakers, teaching media/film, teaching the three-year JC course, teaching ICT skills, and teaching basic literacy skills.

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Glossary of Terms

<i>Correlation</i>	Correlation coefficients are used to describe the strength of a relationship between two variables, e.g., the relationship between socioeconomic status and 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. A value of 0 indicates there is no relationship between variables, while the closer a value is to ± 1 , the stronger the relationship. In this report, the magnitudes of correlations are assigned qualitative labels to assist in interpretation (weak [$<.1$], weak to moderate [$.1$ to $.25$], moderate [$.25$ to $.4$], moderate to strong [$.4$ to $.55$], and strong [$.55$ or greater]). The letter ‘r’ is used to denote a correlation.
<i>Domain</i>	The three subject areas assessed in PISA are referred to as domains. In each cycle one of these subject areas becomes the ‘major domain’. In 2009, reading was the major domain of the PISA assessment, meaning that more items were used to assess reading than mathematical or scientific literacy (the ‘minor domains’ in 2009).
<i>Percentile</i>	A percentile rank is the percentage of scores in a distribution that are at or below a given score. For example, if a student scores at the 90th percentile, this means that their score was better than or equal to the scores of 90% of the sample. The scores of students at the 10th and 90th percentiles are often used as benchmarks for high and low achievement.
<i>Proficiency levels</i>	Performance in PISA can also be described in terms of proficiency levels. Proficiency levels describe the skills that students falling within certain score ranges can demonstrate. For reading, seven proficiency levels have been described: Level 1b is the lowest, followed by Level 1a, Level 2 and so on up to Level 6. There is also a ‘below Level 1b’ category for students who did not demonstrate skills required to answer the easiest PISA reading items. A student scoring at the bottom of a proficiency level has a $.62$ probability of answering the easiest items at that level correctly, and a $.42$ probability of answering the most difficult items correctly. A student scoring at the top of a level has a $.62$ probability of getting the most difficult items right, and a $.78$ probability of getting the easiest items right. Students below Level 1 are expected to respond correctly to fewer than 50% of Level 1 items. Item scores are on the same scale as student scores, so that item scores can also be interpreted in terms of proficiency levels, i.e. an item with a scale score of 400 is at Level 1a and is relatively easy, while an item with a scale score of 650 is at Level 5 and is a relatively difficult item.
<i>Rotated booklet design</i>	PISA uses a rotated booklet design, meaning that each student was given one of 13 booklets at random, each containing different combinations of items. Each booklet is divided into four half-hour blocks of about 15 items. Each block appeared in four booklets in different positions (once in each quarter of the booklets). All booklets contained some reading items, while nine of the 13 booklets contained mathematics items and nine contained science items. By linking items that are common across booklets, an equivalent achievement score for reading, mathematics and science is assigned to each student regardless of the particular booklet attempted.
<i>Significant difference</i>	A difference between groups is said to be significant if it is established that it is unlikely to have occurred by chance.
<i>Standard Deviation (SD)</i>	The standard deviation is a measure of how much variation there is in the scores of a particular group. In PISA, domains are scaled to have an OECD mean of 500 and a standard deviation of 100. A standard deviation of 100 means that, on average across the OECD, two-thirds of students score between 400 and 600, and 95% of students score between 300 and 700.

