A teacher's guide to PISA reading literacy

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Acknowledgements

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The Programme for International Student Assessment (PISA) is an international assessment of the skills and knowledge of 15-year olds. A project of member countries of the Organisation for Economic Co-operation and Development (OECD), it has taken place at three year intervals

The full national reports can be found, along with much more information about PISA, at www.acer.edu.au/ozpisa.

since 2000. Detailed reports of Australian students' performance and their attitudes and beliefs towards reading in PISA can be found in the full reports written to inform the wider educational community. In December 2013 the results of the most recent PISA assessment, PISA 2012, will be released.

After each three-year cycle, a number of items from the assessment are released by the OECD so that educators are able to see how the assessment is constructed. By combining these released items with a description of Australian students' performance on the items, and providing an overall picture of achievement in the subject area, this report (and the companion reports on mathematical literacy and scientific literacy) aims to enable teachers to gain a deeper understanding of PISA and to use the results of the assessment to inform their teaching.[1]

More and more, policy makers are using the results of studies such as PISA to make decisions about education – for example the Australian Government's *National Plan for School Improvement* establishes a new target to place Australia in the top five countries in the world in reading, numeracy and science by 2025 (see www.betterschools.gov.au). It is important that practitioners and others understand the assessments which underpin the goals, and think about how they are able to make a difference to the outcomes of Australian children.

The aim of this report is to provide this understanding, and encourage discussion about assessment, achievement and benchmarking within the wider educational community.

PISA … what is it?

PISA is a key part of Australia's National Assessment Program (NAP). Alongside NAPLAN, which is a census of students at Years 3, 5, 7 and 9, nationally representative samples of students participate in three national assessments in science literacy, civics and citizenship, and ICT literacy. Together with these, nationally representative samples of Australian students also participate in two international studies as part of the NAP (Figure 1.1). These studies enable Australia to benchmark our

PISA is a key part of the MCEECDYA National Assessment Program

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1   This report addresses the findings about the print reading literacy aspect of PISA 2009, not the digital reading aspect.

students in reading, mathematical and scientific literacy against similar samples of students in more than 60 other countries.
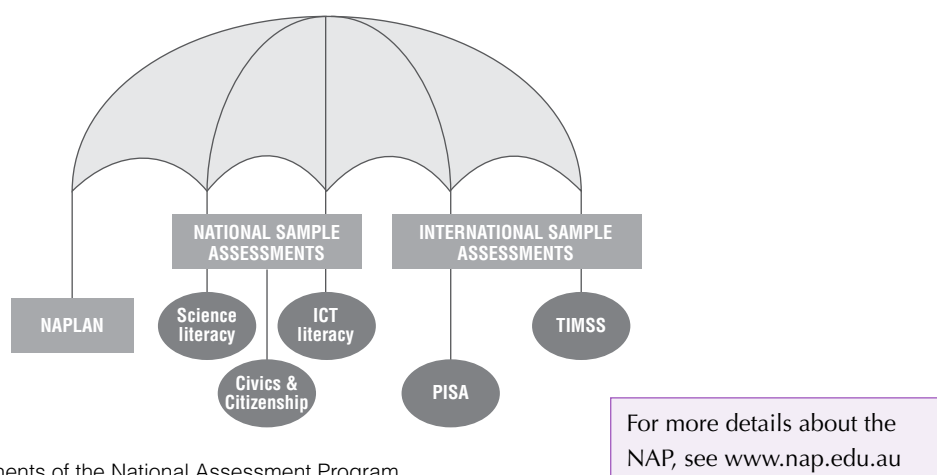

Figure 1.1 Components of the National Assessment Program

For more details about the NAP, see www.nap.edu.au

PISA was designed to assist governments in monitoring the outcomes of education systems in terms of student achievement on a regular basis and within an internationally accepted common framework, in other words, to allow them to compare how students in their countries were performing on a set of common tasks compared to students in other countries. In this way, PISA helps governments to not only understand, but also to enhance, the effectiveness of their educational systems and to learn from other countries' practices.

Students aged 15 were chosen as the target group in PISA as compulsory schooling ends at this age in many countries.

PISA seeks to measure how well young adults, at age 15 and therefore near the end of compulsory schooling in most participating education systems, have acquired and are able to use knowledge and skills in particular areas to meet real-life challenges.

In addition to assessing facts and knowledge, PISA assesses students' ability to use their knowledge to solve real-world problems. Thus, the term 'literacy' is used, since it implies not only knowledge of a domain, but also the ability to apply that knowledge.

As part of PISA, students complete an assessment including items testing reading literacy, mathematical literacy and scientific literacy. In each cycle of PISA, one of the cognitive areas is the main focus of the assessment, with most of the items focussing on this area and fewer items on the other two areas (although still enough items to provide links between years) (see Figure 1.2 – shading indicates the major domain of the cycle). Students also complete an extensive background questionnaire, and school principals complete a survey describing the context of education at their school, including the level of resources in the school, qualifications of staff and teacher morale.

PISA 2000	PISA 2003	PISA 2006	PISA 2009	PISA 2012
Reading Literacy	Reading Literacy	Reading Literacy	Reading Literacy	Reading Literacy
Mathematical Literacy	Mathematical Literacy	Mathematical Literacy	Mathematical Literacy	Mathematical Literacy
Scientific Literacy	Scientific Literacy	Scientific Literacy	Scientific Literacy	Scientific Literacy

Figure 1.2 Cycles of PISA and the major and minor domains of assessment for each cycle

The reporting of the findings from PISA focuses on issues such as:

◗ How well are young adults prepared to meet the challenges of the future?

◗ Can they analyse, reason and communicate their ideas effectively?

◗ What skills do they possess that will facilitate their capacity to adapt to rapid societal change?

- ◗ Are some ways of organising schools or school learning more effective than others?
- ◗ What influence does the quality of school resources have on student outcomes?
- ◗ What educational structures and practices maximise the opportunities of students from disadvantaged backgrounds?
- ◗ How equitable is the provision of education within a country or across countries?
- ◗ What do PISA students and schools do?

What do PISA students and schools do?

Cognitive assessment

In PISA 2009, the majority of the assessment was devoted to reading literacy, with mathematical literacy and scientific literacy assessed to a lesser extent. Participating students each completed a two-hour paper-and-pen assessment.

> Students completed a pen-and-paper assessment and a context questionnaire.

A sub-sample of students who participated in the paper-and-pen assessment also completed an assessment of digital reading literacy, which used the information technology infrastructure (computer laboratories) at schools.

Context questionnaire

The data collected in the 35-minute Student Questionnaire provide an opportunity to investigate factors that may influence performance and consequently give context to the achievement scores. Responses to a set of 'core' questions about the student and their family background, (including age, year level and socioeconomic status) are collected during each assessment. In 2009, students were also asked about their engagement with reading, reading activities, learning strategies and aspects of instruction.

> Students completed a background survey and principals a school survey. The survey results provide rich context for the achievement data.

Information at the school-level was collected through a 30-minute online School Questionnaire, answered by the principal (or the principal's designate). The questionnaire sought descriptive information about the school and information about instructional practices.

Features of PISA 2009

The fourth assessment of PISA, completed in 2009, marked a return to reading literacy as the major focus. In PISA 2009:

- ◗ the reading literacy framework was revised to reflect the changes since 2000, in the way people read and to incorporate the assessment of digital media.
- ◗ the paper-based assessment focused on how well students access and retrieve information; how well students integrate and interpret what they read; and how well students reflect on and evaluate what they read.
- ◗ the paper-based reading literacy proficiency scale was extended to obtain more detailed descriptions at the lower and the higher end of the scale.
- ◗ the student questionnaire reflected the focus on reading literacy by asking students about their engagement in reading activities and use of different learning strategies.
- ◗ students' ability to read, understand and apply digital texts were assessed. This element of PISA 2009 was optional.

Participants in PISA 2009

Although PISA was originally created by OECD governments, it has become a major assessment tool in many regions and countries around the world. Since the first PISA assessment in 2000, the number of countries or economic regions who have participated from one PISA cycle to the next has increased. Sixty-five countries participated in PISA 2009, comprising 34 OECD countries and 31 partner countries/economies (Figure 1.3).
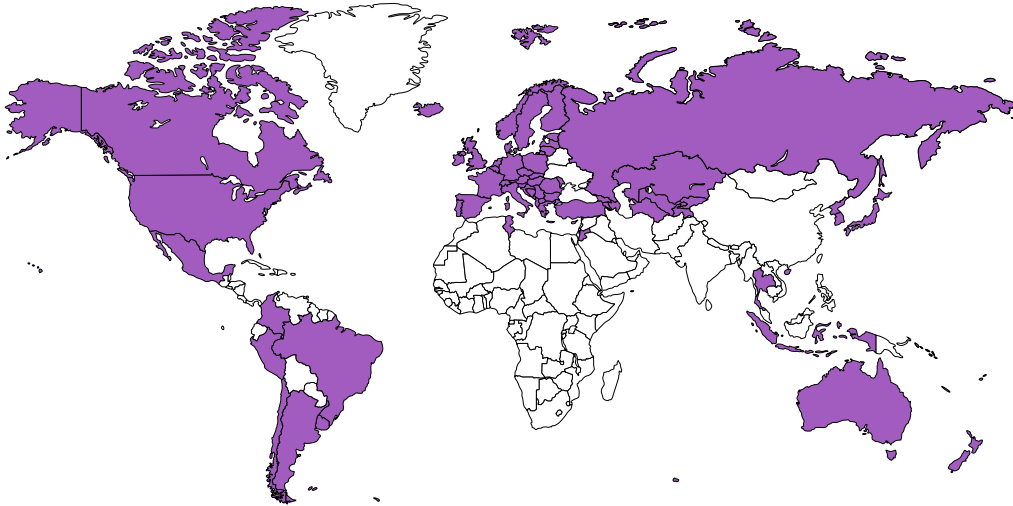

Figure 1.3 Countries participating in PISA 2009

<u>OECD countries</u>: Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States of America.

<u>Partner countries/economies</u>: Albania, Argentina, Azerbaijan, Brazil, Bulgaria, Chinese Taipei, Colombia, Croatia, Dubai (UAE), Hong Kong-China, Indonesia, Jordan, Kazakhstan, Kyrgyzstan, Latvia, Liechtenstein, Lithuania, Macao-China, Montenegro, Panama, Peru, Qatar, Romania, Russian Federation, Serbia, Shanghai-China, Singapore, Thailand, Trinidad and Tobago, Tunisia, Uruguay.

Schools and students

The target population for PISA is students who are 15 years old and enrolled at an educational institution, either full- or part-time, at the time of testing. In most countries, 150 schools and 35 students in each school were randomly selected to participate in PISA. In some countries,

It's important that a range of schools is selected and that a range of students is selected from within schools. This way we are able to get an accurate picture of the whole Australian student population

including Australia, a larger sample of schools and students participated. In Australia's case, a larger sample provides the ability to report reliable results for each state and territory and for Indigenous students. The larger PISA sample is also used as the next cohort for the Longitudinal Survey of Australian Youth (LSAY). The Australian sample for PISA 2009 consisted of 353 schools and 14,251 students.

This report

This report is one of a series of three reports that focus on Australian students' performance on the PISA items that have been released in each of the assessment domains: reading literacy, mathematical literacy and scientific literacy. Further information about PISA in Australia is available from the national PISA website – www.acer.edu.au/ozpisa/ while further details about Australia's participation and performance in PISA 2009 is available in *Challenges for Australian Education: Results from PISA 2009*.

This report focuses on reading literacy. Chapter 2 of this report provides a brief overview of the PISA Reading Framework, so that educators gain an understanding of the context in which the questions for the assessment are written, and an overview of Australia's results in the PISA 2009 international assessment. Chapter 3 provides all of the released items in reading for PISA, along with marking guides, examples of responses and the performance of Australian students and that of students in comparison countries on these items. The focus of Chapter 4 is the context behind achievement: enjoyment of reading, what students read and how often they read, along with the recognition and use of appropriate and high-level strategies for learning.

Chapter 2

Reading literacy in PISA[2]

How is reading literacy defined in PISA?

The PISA concept of reading literacy emphasises the ability to use written information in situations that students may encounter in their life at and beyond school. PISA 2009 defines reading literacy 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.

The definition is broader than simply decoding information and literal comprehension. It implies that reading literacy involves understanding, using and reflecting on written information in a range of situations. It also recognises the awareness of and the ability to use a variety of appropriate strategies when processing texts.

This definition is consistent with the view of literacy for the Australian Curriculum:

> Students become literate as they develop the knowledge, skills and dispositions to interpret and use language confidently for learning and communicating in and out of school and for participating effectively in society. Literacy involves students in listening to, reading, viewing, speaking, writing and creating oral, print, visual and digital texts, and using and modifying language for different purposes in a range of contexts.
>
> Literacy is developed through the specific study of the English language in all its forms, enabling students to understand how the English language works in different social contexts and critically assess writers' opinions, bias and intent, and assisting them to make increasingly sophisticated language choices in their own texts. The English learning area has a central role in the development of literacy in a manner that is more explicit and foregrounded than is the case in other learning areas. Students learn literacy knowledge and skills as they engage with the Literacy and Language strands of English. They apply their literacy capability in English when they interpret and create spoken, print, visual and multimodal texts for a range of purposes.
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> Australian Curriculum, Assessment and Reporting Authority, 2013[3]

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2   Parts of this chapter have been taken from the *PISA 2009 assessment framework: Key competencies in reading, mathematics and science* and *PISA 2009 Results: What students know and can do (Volume I) (available* www.oecd.org/pisa/pisaproducts/44455820.pdf).

3   Available from www.australiancurriculum.edu.au/English/General-capabilities

To further understand the PISA 2009 definition of reading literacy, each part of the definition is explained further:

◗ *Understanding* refers to the ability to gain meaning from what is read. This can include the meaning of words or it can be more complex in identifying the underlying theme of a narrative.

◗ *Using* relates to the notions of application and function (i.e. applying what has been read to an immediate task or goal, or using what is read to reinforce or change beliefs).

◗ *Reflecting on* emphasises the notion that reading is interactive, where readers make connections with their own thoughts and experiences when engaging with a text.

◗ *Engaging with* involves the reader's motivation to read and is comprised of constructs including interest in and enjoyment of reading, a sense of control over what one reads, and reading practices.

◗ *Written texts* includes texts from a variety of media – hand-written, printed and digital. They can include visual displays such as diagrams and pictures. Written texts can be in a variety of formats, including continuous and non-continuous, and in a variety of text types, such as narrative and expositons.

In order to achieve one's goals, to develop one's knowledge and potential, and to participate in society – this statement is intended to capture the full scope of situations in which reading literacy plays a role. *To achieve one's goals* and *to develop one's knowledge and potential* refers to the idea that reading literacy enables the fulfilment of individual aspirations. The word *participate* is used because it implies that reading literacy allows people to contribute to society as well as to meet their own needs.

How reading literacy is measured in PISA

PISA acknowledges that readers respond to a given text in a variety of ways as they seek to use and understand what it is they are reading. The concept of reading literacy in PISA can be described along three dimensions: *texts* (the range and format of the reading material), *aspects* (the type of reading task or reading processes involved), and *situations* (the range of contexts for which the text was constructed).

Texts

Text refers to the type of material that is read. There are four main text classifications in PISA 2009:

◗ **Text format** refers to whether a text is continuous, non-continuous, mixed or multiple. Continuous texts are formed by sentences that are in turn 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.

◗ **Text type.** All texts in PISA are classified by text type according to the main rhetorical purpose of the text. This ensures the assessment includes a range of texts that represent different types of reading. It is not conceived of as a variable that influences the difficulty of a task. Text type has been classified into six categories:

  – Description (e.g., process in a technical manual, catalogue, blog diary)

  – Narration (e.g., novel, comic strip, report in a newspaper)

  – Exposition (e.g., essay, entry into online encyclopaedia)

  – Argumentation (e.g., letter to the editor, posts in an online forum)

  – Instruction (e.g., recipe, instructions for operating software)

  – Transaction (e.g., personal letter to share news, text message to arrange meeting)

◗ **Medium** refers to the form in which texts are presented – print (paper) or digital (hypertext). Print medium texts appear on paper in many different forms – single sheets, brochures, magazines and books. The static nature of the printed text is usually read in a particular sequence and the total amount of text is visible to the reader.

◗ **Environment** applies only to digital-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.

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).

These dimensions define the PISA reading literacy framework and formed the foundation used by test developers to construct the tasks that made up the 2009 assessment. Some of the elements in the three dimensions are used as the basis for constructing scales and subscales, and subsequently for reporting, whereas other elements ensure that reading literacy is adequately covered.
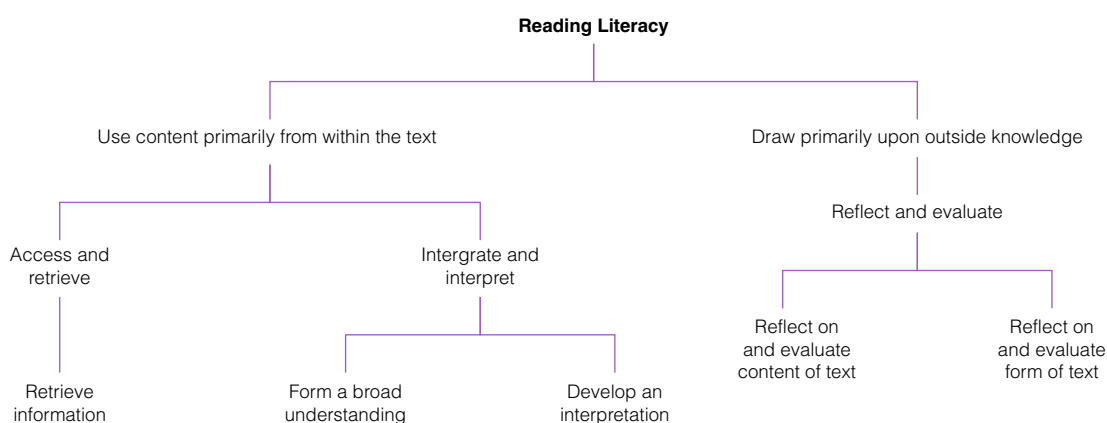

Figure 2.1 Relationship between the Reading framework and the Aspect subscales[4]

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4   Source: OECD (2008). *PISA 2009 assessment framework: Key competencies in reading, mathematics and science.* Paris: OECD. (Figure 1.3, p.35)

Situations

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.

The structure of the assessment

The framework serves as the conceptual basis for assessing students' proficiency in reading literacy. New tasks and questions were developed to reflect the concepts in the framework. The incorporation of digital texts into the framework required two different assessments: a paper-and-pen assessment and a computer-based assessment. Details about the paper-and-pen assessment are included in the current report, whereas the assessment of digital reading has been described in a separate, dedicated report.

Item response formats

Reading literacy was assessed through a range of item response formats to cover the full range of cognitive abilities and knowledge identified in the PISA 2009 framework. These included multiple-choice items, in which students were required to select one correct response from among four or five possible response options; complex multiple-choice items, where students were required to select the correct response to each of a number of statements or questions; closed constructed-response items, to which students were to provide their own responses with a limited range of acceptable answers; short response items, which required students to provide a brief answer similar to the closed constructed-response items, but with a wider range of possible answers; and open constructed-response items, in which students wrote a short explanation in response to a question, showing the methods and thought processes they had used in constructing their response.

Distribution of items

The PISA 2009 reading literacy items were distributed across the three different aspects (*access and retrieve*, *integrate and interpret*, and *reflect and evaluate*), the two text formats (*continuous* and *non-continuous*) and the four situations (*personal*, *public*, *occupational* and *educational*).

Of the 131 reading literacy items assessed in PISA 2009, 52 were multiple-choice items; 10 were complex multiple-choice items; 13 were closed constructed-response items; 11 were short response items; and 45 were open constructed-response items.

Responses to the multiple-choice items and closed constructed-response items were captured automatically for processing and analysis. The open constructed-response items required coding by trained expert coders where codes are assigned using predefined response categories. Approximately 40 per cent of the tasks required expert judgement in coding across the three aspects.

For responses where a student provided a correct response and showed the highest level of understanding of the topic appropriate for a 15-year old, full credit was assigned. A response that showed very little evidence of understanding (i.e. the response was incorrect) or responses that were

Detailed information about the contruction of assessment booklets and the marking of PISA items can be found in the national report, available from www.acer.edu.au/ozpisa.

irrelevant or missing, received no credit. There were, however, some open constructed-responses that showed varying levels of understanding and thus required partial credit scoring. A student was assigned a partial credit where the response was less sophisticated in the understanding displayed but still factually correct.

Constructing the assessment booklets

Over 130 reading literacy items, equivalent to 270 minutes of assessment time, were developed to ensure the broadest possible coverage of reading literacy was achieved. Students were assigned a two-hour assessment booklet that contained a subset of the total pool of items. Each assessment booklet was organised into four 30-minute clusters. As reading literacy was the major domain, every booklet included at least one cluster of reading literacy tasks, with the other clusters assessing either mathematics or science. The balanced, rotated test design ensured that each cluster appeared in each of the four possible positions in the booklets, and each pair of clusters appeared in at least one of the 13 assessment booklets.

Scaling the reading literacy tasks

The scale of reading literacy was constructed using Item Response Theory, with reading literacy items ranked by difficulty and linked to student proficiency. Using such methods means that the relative ability of students taking a particular test can be estimated by considering the proportion of test items they answer correctly, while the relative difficulty of items in a test can be estimated by considering the proportion of students getting each item correct. On this scale, it is possible to estimate the location of individual students, and to describe the degree of reading literacy that they possess.

The relationship between items and students on the reading literacy scale (shown in Figure 2.2) is probabilistic. The estimate of student proficiency reflects the kinds of tasks they would be expected to successfully complete. A student whose ability places them at a certain point on the PISA reading literacy scale would most likely be able to successfully complete tasks at or below that location, and increasingly more likely to complete tasks located at progressively lower points on the scale, but would be less likely to be able to complete tasks above that point, and increasingly less likely to complete tasks located at progressively higher points on the scale.
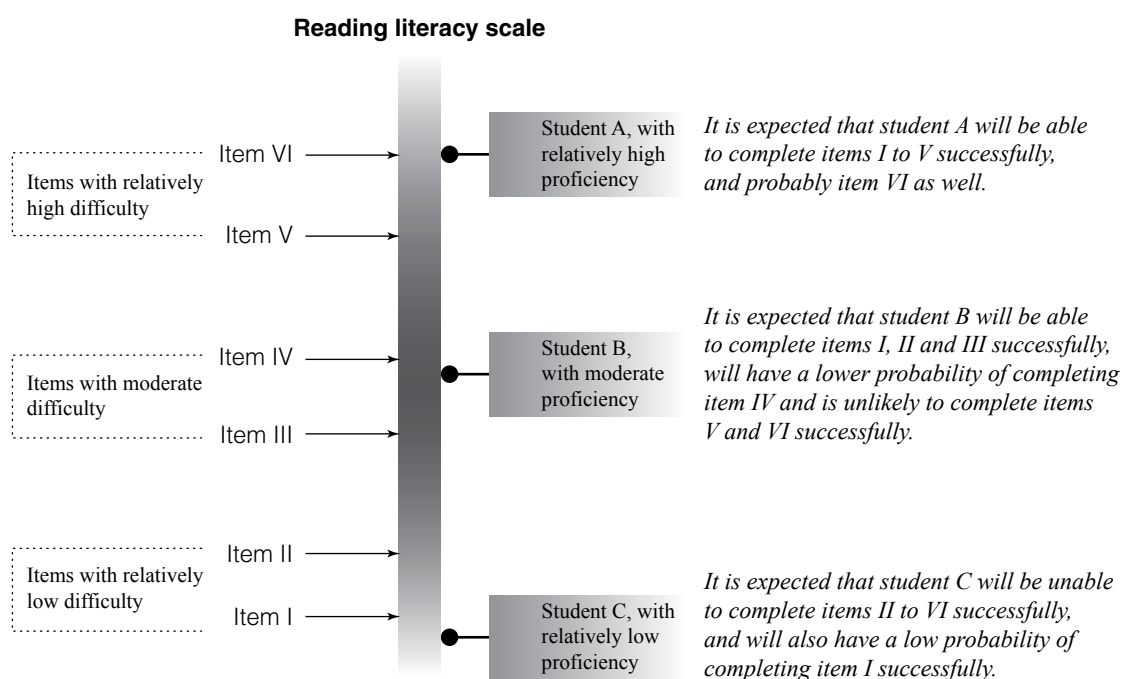
Reading literacy scale

Items with relatively high difficulty	Item VI Item V	Student A, with relatively high proficiency	*It is expected that student A will be able to complete items I to V successfully, and probably item VI as well.*

Items with moderate difficulty	Item IV Item III	Student B, with moderate proficiency	*It is expected that student B will be able to complete items I, II and III successfully, will have a lower probability of completing item IV and is unlikely to complete items V and VI successfully.*

Items with relatively low difficulty	Item II Item I	Student C, with relatively low proficiency	*It is expected that student C will be unable to complete items II to VI successfully, and will also have a low probability of completing item I successfully.*

Figure 2.2 The relationship between items and students on the reading literacy scale

Reporting reading literacy performance: mean scores and proficiency levels

The results for all countries for PISA 2000 – 2009 are available through the international and national reports (www.acer.edu.au/ozpisa). The following section of this report will provide a brief overview of Australia's results compared to those of some other countries, and will give the reader an idea of how Australian students perform on this assessment compared to:

◗ other native English speaking countries (Canada, New Zealand, United States);

◗ Finland (highest scoring country previously);

◗ high-achieving Asian neighbours (Hong Kong- China, Korea, Shanghai-China, Singapore); and

◗ the OECD average.

Mean scores and distribution of scores

Student performance in PISA is reported in terms of statistics such as mean scores and measures of distributions of achievement, which allow for comparisons against other countries and subgroups. Mean scores provide a summary of student performance and allow comparisons of the relative standing between different student subgroups. In PISA 2000, the mean score across participating OECD countries was set at 500 score points with a standard deviation of 100. In PISA 2009, the mean score across participating OECD countries changed slightly to a mean score of 493 score points with a standard deviation of 93.[5] This mean score has become the benchmark against which reading performance is compared.

Figure 2.3 shows the scores of the countries listed above relative to the OECD average. All countries that are annotated with an asterisk (*) scored at a level significantly higher than the OECD average of 493, and the countries whose bars are shaded in dark purple are those whose scores were significantly higher than those of Australia.
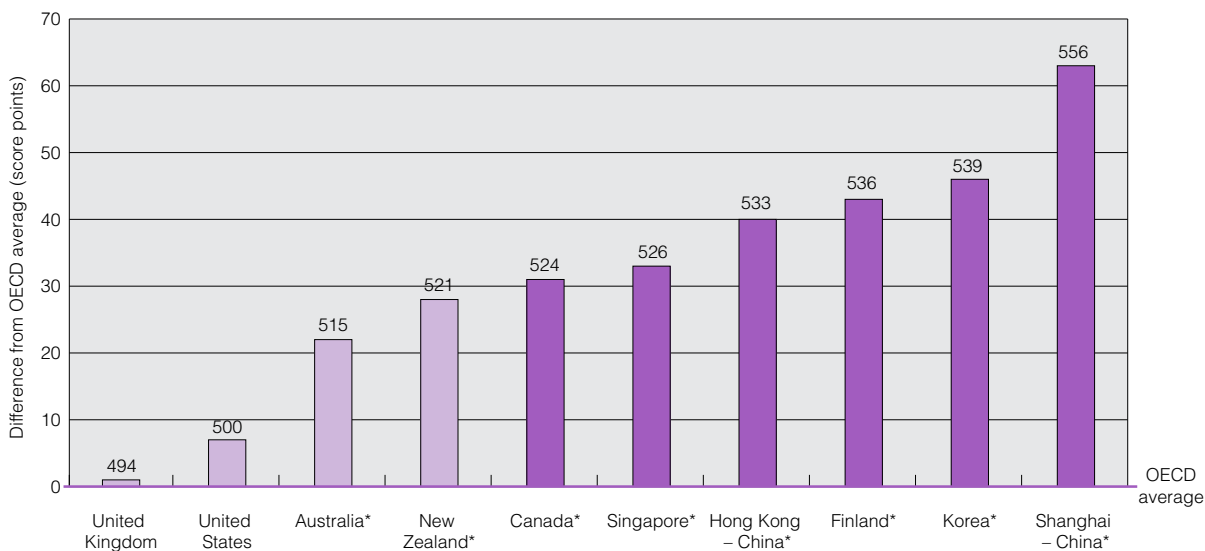

Figure 2.3 PISA 2009 Reading achievement comparison with OECD average score

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5   The OECD average reflects the mean score for all OECD countries. The OECD average can change from each PISA assessment because the number of participating countries differs (for eg. in 2000, there were 28 OECD countries and in 2009 this had increased to 34 OECD countries) and also because the overall performance for a country can change.

Interpreting such data can be challenging. We know what the mean and standard deviation are, but what does this mean in practical terms? Fortunately we are able to get a rough measure of how many score points comprise a year of schooling, given that 15-year-old students are often in adjacent grades.

> For Australia, in reading literacy, one year of schooling was found to be the equivalent of 33 score points

Looking at the difference between the scores of students in Shanghai-China and those in Australia, the score difference of 41 score points translates to about 15 months of schooling.

Reading proficiency levels in PISA 2009

In addition to reporting the average (mean) scores for each country, PISA is able to provide a profile of students' reading, mathematics and science performance using 'proficiency levels', categories that summarise the skills and knowledge that students are able to display. For PISA 2009, the proficiency level scale for reading literacy was expanded at both ends, to provide further information about what the highest and lowest performing students can do (Figure 2.4).

	Students at this level can…
☐ Level 6	Make multiple inferences, comparisons and contrasts, demonstrate a full and detailed understanding of one or more texts; integrate information from more than one text. The reader may be required to deal with unfamiliar ideas in the presence of prominent competing information.
☐ Level 5	Locate and organise several pieces of deeply embedded information, inferring which information in the text is relevant; critically evaluate or hypothesise, drawing on specialised knowledge.
☐ Level 4	locate and organise several pieces of embedded information, interpret the meaning of nuances of language in a section of text, demonstrate an accurate understanding of long or complex texts whose content or form may be unfamiliar.
☐ Level 3	locate, and in some cases recognise the relationship between, several pieces of information, integrate several parts of a text in order to identify a main idea; locate required information that is not prominent or where there is much competing information; demonstrate a fine understanding of the text in relation to familiar, everyday knowledge.
☐ Level 2	locate one or more pieces of information; recognise the main idea in a text, understand relationships, or construe meaning within a limited part of the text when the information is not prominent and the reader must make low level inferences.
☐ Level 1a	locate one or more independent pieces of explicitly stated information; recognise the main theme or author's purpose in a text about a familiar topic; make simple connections.
☐ Level 1b	locate a single piece of explicitly stated information in a prominent position in a short, syntactically simple text with a familiar context and text type in which there is a high level of support for the reader.
☐ Below Level 1b	not demonstrate even the most basic types of reading literacy that PISA measures.

Figure 2.4 Summary descriptions of the seven proficiency levels on the overall reading literacy scale

The percentage of students at each of the seven proficiency levels and the proportion not achieving the lowest proficiency level is shown in Figure 2.5. Clearly, based on 2009 data, Australia is doing reasonably well in reading, with just 14 per cent not achieving the lowest levels described by MCEECDYA as being an acceptable standard.
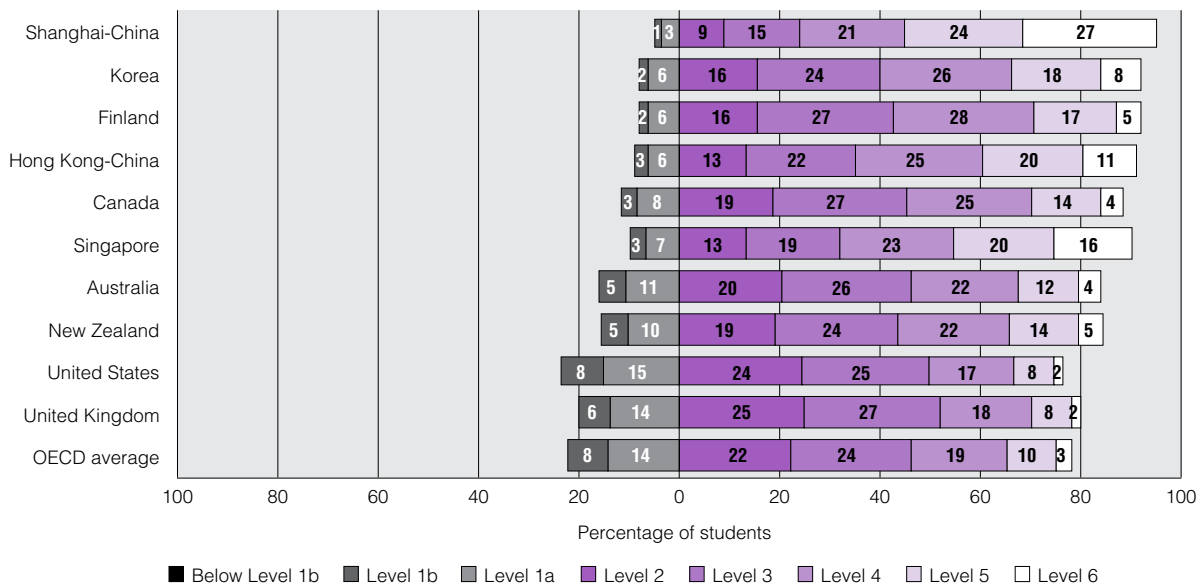
Figure 2.5 Proportions of students at reading proficiency levels for Australia and comparison countries

However it is also quite evident from the figure that Australia has a substantially higher proportion of students in the lower reading levels than some other countries, and that Australia has a lower proportion of students in the higher levels of achievement. Both need to be addressed if Australia's achievement is to improve.

Gender differences

The proportions of females and males at each of the reading literacy proficiency levels in Australia and across the OECD countries are shown in Figure 2.6.
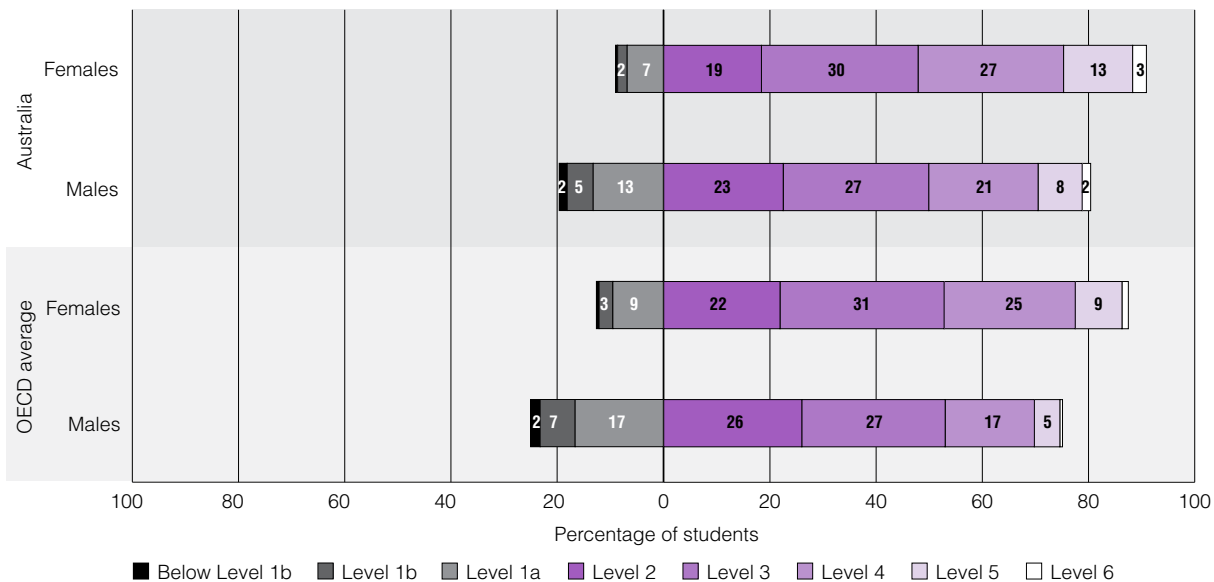
Figure 2.6 Proportions of students at reading proficiency levels by gender, Australia and OECD average

◗ The proportion of females tended to be higher in the higher proficiency levels and lower at the lower proficiency levels.

◗ In Australia, 16 per cent of females and 10 per cent of males reached Level 5 or 6, compared to 10 per cent of females and six per cent of males across OECD countries.

◗ There were twice as many Australian males (20%) as females (9%) who failed to reach Level 2. These figures are slightly better than the OECD average of 26 per cent of males and 12 per cent of females not reaching Level 2.

> While the proportion of boys in Australia not achieving Level 2 is lower than across the OECD, do you think it is acceptable? Is it a reflection of the situation in your school?

Performance on the reading literacy subscales

Earlier in this chapter, we described the components of reading literacy (subscales) – "Aspects", or cognitive strategies or approaches, and "Text format". The difference between Australian students' scores and the OECD average on each of these is shown in Figure 2.7.

◗ Australian students scored significantly better than the OECD average on each of the subscales.

◗ Australian students performed relatively better on "*reflect & evaluate*" tasks, and on items involving *non-continuous texts*.
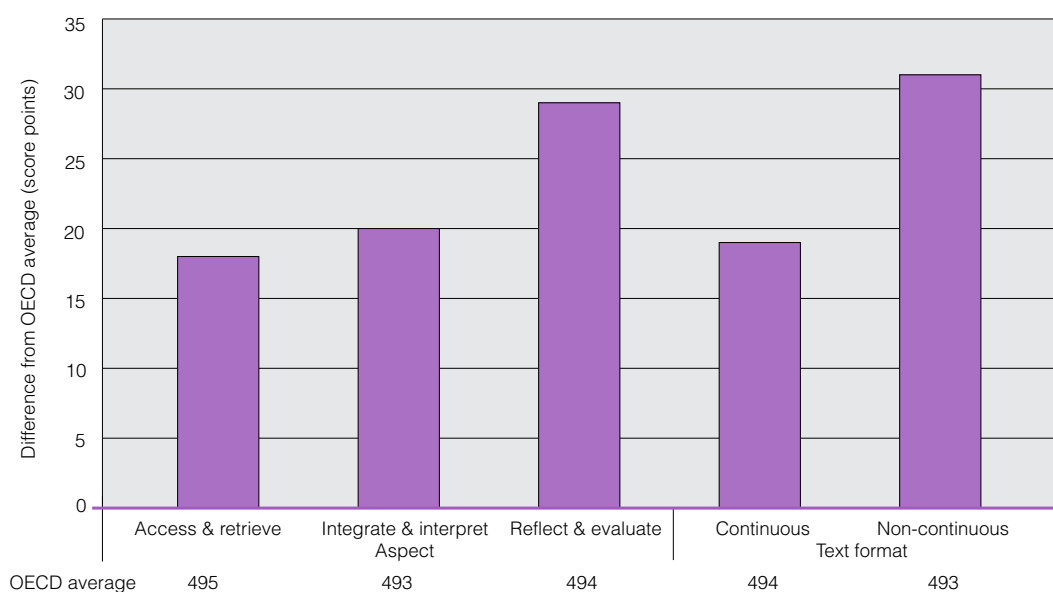

| OECD average | 495 | 493 | 494 | 494 | 493 |

Figure 2.7 Performance on reading subscales for Australian students relative to OECD average

Performance over time

One of the main aims of PISA is to examine student performance over time so that policy makers can monitor learning outcomes in both a national and international context. In PISA 2000 and PISA 2009 the main focus of the assessment was reading literacy, and these data allow us to make comparisons.

Australia's score declined significantly between 2000 and 2009, from 528 score points to 515 score points, which is about 4½ months of schooling. This was the case in only three other countries, while students in ten other countries performed at a significantly better level than in 2000.

Further analysis showed that Australia's decline was a combination of fewer students achieving at Proficiency Levels 5 and 6 and a larger number of males not achieving Level 2.

Results for other groups of students within Australia

Indigenous students:

◗ achieved a mean score of 436 points, compared to a mean score of 518 points for non-Indigenous students. The difference in scores is the equivalent of more than two years of schooling.

◗ were underrepresented at the higher end of the reading literacy proficiency scale. Less than three per cent achieved at or above Level 5, compared to 13 per cent of non-indigenous Australian students and eight per cent of students on average across the OECD achieved this level.

◗ were over-represented at the lower end of the reading literacy proficiency scale. Almost 40 per cent of Indigenous students failed to reach Level 2, compared to 19 per cent of students across the OECD and 13 per cent of non-Indigenous students in Australia.

> These results indicate that a large proportion of Indigenous students may not be adequately prepared to function effectively in today's society.

Students with a language background other than English:

◗ performed at a similar level to students who spoke English as their main language, with mean scores of 519 points and 503 points respectively.

◗ achieved similar proportions attaining Level 5 or 6 to those with English as their main language, with 13 per cent of students in each group attaining these high levels.

◗ were more likely than students with an English speaking background to not reach Level 2, (20% and 13% respectively)

Students from the lowest quartile of socioeconomic background:

◗ achieved a mean score of 471 points compared to students in the highest quartile who achieved a mean score of 562 points.

◗ were overrepresented at lower levels of achievement and underrepresented at higher levels. Just five per cent of students in the lowest quartile compared with 25 per cent of students in the highest quartile achieved at or above Level 5, while five per cent of students in the highest quartile of socioeconomic background, compared to around one quarter (24%) of students in the lowest quartile failed to reach Level 2.

> This difference between students from the lowest and highest socioeconomic quartiles was equivalent to almost three full years of schooling.

Students in metropolitan areas:

◗ performed at a significantly higher level than students in schools from provincial areas, who in turn performed at a significantly higher level than students attending schools in remote areas.

◗ were more likely to achieve at the higher proficiency levels - 14 per cent from metropolitan schools, eight per cent from provincial schools and six per cent of students from remote schools, achieved at or above Level 5.

◗ were less likely to achieve at the lower proficiency levels - 13 per cent of those in metropolitan schools, 17 per cent in provincial schools, and 29 per cent of students in remote schools failed to reach Level 2.

> The score differences equate to about 2/3 of a school year between students in metropolitan and provincial schools and a further year higher than those in remote schools.

Points to ponder

◗ Do you think there are substantial differences in the performance of different groups of students in your school, as described in this chapter?

◗ What are some reasons you can think of that would help explain gender differences in reading literacy?

◗ One of the things that Australia needs to do to improve our overall reading literacy is to address the issue of the underachievement of disadvantaged students. What are some ways that schools can help students who are from lower levels of socioeconomic background?

◗ The results showed that Australian students were weaker on tasks that required accessing and retrieving, and integrating interpreting skills. What could you do to help students improve their skills in this area?

3

Sample reading literacy items

A small number of reading literacy items have been publicly released to help illustrate the dimensions outlined in the framework (aspect, situation and text format), the range of tasks included in the assessments and the scope of PISA's reading literacy domain. The majority of reading literacy items are retained for future PISA assessments to allow monitoring of performance over time (across cycles).

Students are asked to respond to a variety of tasks at different levels.

About one-quarter of the items in the pool of PISA reading literacy tasks were assigned the *access and retrieve* classification, around half of the items were organised in the aspect of *integrate and interpret* and one-quarter of the items were classified as *reflect and evaluate* by aspect. Proficiency descriptions have also been developed for each of the three aspect subscales and two text format subscales, and they are summarised in Appendix 1.

Figure 3.1 presents a map of the sample reading literacy items included in this section. The most difficult items are located at the top of the figure, at the higher proficiency levels, and the least difficult, at the lower levels, at the bottom. Each of the items is placed in the relevant proficiency level according to the difficulty of the item (the number in brackets), and in the aspect (*access and retrieve*, *integrate and interpret* and *reflect and evaluate*) and text format (*continuous* and *non-continuous*) subscales they are assessing.

The items 'Brushing your Teeth' and 'Blood Donation Notice' are examples of particularly easy reading literacy items. Most of the items from 'The Play's the Thing' are more difficult items, with three of the four items placed at Level 4 or higher. None of the released items are located at Level 5.

One of the items in the unit 'Balloon' illustrates a partial credit response placed at Level 2 and the full credit item located at Level 4. The coding instructions have also been included for this item, to illustrate how this open constructed-response item was coded.

Proficiency level	Access and retrieve		Integrate and interpret		Reflect and evaluate	
	Continuous	Non-continuous	Continuous	Non-continuous	Continuous	Non-continuous
6			THE PLAY'S THE THING Question 3 (730)			
698.3 score points						
5						
625.6 score points						
4		BALLOON Question 3 (595) (full credit)	THE PLAY'S THE THING Question 7 (556)	MOBILE PHONE SAFETY Question 2 (561)		MOBILE PHONE SAFETY Question 11 (604)
552.9 score points						
3			MISER Question 5 (548) TELECOMMUTING Question 1 (537)	MOBILE PHONE SAFETY Question 9 (488)	TELECOMMUTING Question 7 (514)	MOBILE PHONE SAFETY Question 6 (526) BALLOON Question 4 (510)
480.2 score points						
2		BALLOON Question 3 (449) (partial credit)	THE PLAY'S THE THING Question 4 (474) BLOOD DONATION NOTICE Question 8 (438)			BALLOON Question 6 (411)
407.5 score points						
1a	BRUSHING YOUR TEETH Question 2 (358)		MISER Question 1 (373) BRUSHING YOUR TEETH Question 1 (353)	BALLOON Question 8 (370)	BRUSHING YOUR TEETH Question 4 (399) BLOOD DONATION NOTICE Question 9 (368)	
334.6 score points						
1b	MISER Question 7 (310) BRUSHING YOUR TEETH Question 3 (285)					
262.0 score points						

Figure 3.1 Aspect (access and retrieve, integrate and interpret, and reflect and evaluate) and text format (continuous and non-continuous) of the sample reading literacy items by proficiency level location

Options for assessment

Countries were provided with the option of selecting items for their reading assessment from a standard and easier set of items. The items in the easier set include more items from the lower proficiency levels. The easier set of items tended to be used in lower-performing countries. Australian students did not complete the units 'Brushing your teeth', 'Blood donation notice' or 'Miser' as these units formed part of the set of easier reading literacy units. The questions and student example responses from these units are provided here as examples of the types of knowledge and skills demanded of students at the lower proficiency levels, even though percentages of students who responded correctly are not available for Australia or any of the comparison countries.
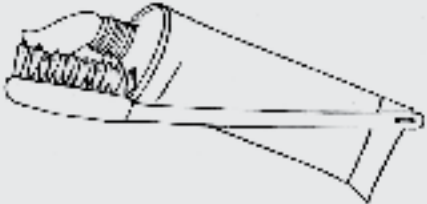
Level 1 Example: Brushing your teeth

The stimulus, shown below, is a short text about the everyday topic of brushing your teeth accompanied by a supporting illustration. The stimulus for this task is an example of expository writing in a *continuous text* format, classified as an educational situation.

BRUSHING YOUR TEETH

Do our teeth become cleaner and cleaner the longer and harder we brush them?

British researchers say no. They have actually tried out many different alternatives, and ended up with the perfect way to brush your teeth. A two minute brush, without brushing too hard, gives the best result. If you brush hard, you harm your tooth enamel and your gums without loosening food remnants or plaque.

Bente Hansen, an expert on tooth brushing, says that it is a good idea to hold the toothbrush the way you hold a pen. "Start in one corner and brush your way along the whole row," she says. "Don't forget your tongue either! It can actually contain loads of bacteria that may cause bad breath."

'Brushing your Teeth' is an article from a Norwegian magazine.

Use 'Brushing Your Teeth' above to answer the questions that follow.

All of the items relating to 'Brushing your teeth' are among the easiest PISA reading literacy items, located at the lower end of the reading literacy proficiency scale. This unit assesses all three reading aspects.

Brushing your teeth Question 1

The first question is a multiple-choice item that requires students to recognise a broad generalisation about what the article describes. The aspect involved with this task is *integrate and interpret*. The required information in the text is prominent, making it an easy reading task with a difficulty of 353 score points, located at Level 1a on the reading literacy proficiency scale. Due to its relatively low level of difficulty, not all participating countries included this item in their assessments. Australia, along with all of the countries selected for comparison purposes, did not include the 'Brushing your teeth' unit in the 2009 reading assessment and so results are not available for these items.

What is this article about?

- (A) The best way to brush your teeth.
- B The best kind of toothbrush to use.
- C The importance of good teeth.
- D The way different people brush their teeth.

Brushing your teeth Question 2

This item has a similar difficulty (with 358 score points) to the previous question and is located at Level 1a. The task requires students to retrieve a synonymous piece of information from the text and is therefore classified as *access and retrieve*.

What do the British researchers recommend?

A   That you brush your teeth as often as possible.
B   That you do not try to brush your tongue.
C   That you do not brush your teeth too hard.
D   That you brush your tongue more often than your teeth.

Brushing your teeth Question 3

This item is one of the easiest questions in the PISA 2009 reading literacy assessment, with a difficulty of 285 score points, located towards the bottom of Level 1b. The task, assigned to the aspect of *access and retrieve*, asks for a single piece of information directly stated in the text to be located and written out. Students can easily identify the exact place to locate the required information by using the two terms ('tongue' and 'Bette Hansen') provided in the wording of the question. To receive a correct response, students had to refer to 'bacteria' and/or 'getting bad breath'. Responses could be paraphrased or quoted directly from the text. The answer shown below is correct.

Why should you brush your tongue, according to Bente Hansen?

You should brush your tongue because it contains
100's of bacteria that may cause bad breath.

Brushing your teeth Question 4

The final question in this unit, a multiple-choice item, is classified as *reflect and evaluate* and requires students to recognise the purpose of an analogy, in this instance referring to a pen in helping to understand how to hold a toothbrush. Students need to reflect on and evaluate why the pen was mentioned in the text. Again, this item is among one of the easier reading literacy tasks, located near the top of Level 1a, with a difficulty of 399 score points.

Why is a pen mentioned in the text?

A   To help you understand how to hold a toothbrush.
B   Because you start in one corner with both a pen and a toothbrush.
C   To show that you can brush your teeth in many different ways.
D   Because you should take tooth brushing as seriously as writing.

Level 1 Example: Miser

The fable by Aesop is a well-known story and a favourite text type in reading assessments because it is short, self-contained, and has an identifiable moral.

THE MISER AND HIS GOLD

A fable by Aesop

A miser sold all that he had and bought a lump of gold, which he buried in a hole in the ground by the side of an old wall. He went to look at it daily. One of his workmen observed the miser's frequent visits to the spot and decided to watch his movements. The workman soon discovered the secret of the hidden treasure, and digging down, came to the lump of gold, and stole it. The miser, on his next visit, found the hole empty and began to tear his hair and to make loud lamentations. A neighbour, seeing him overcome with grief and learning the cause, said, "Pray do not grieve so; but go and take a stone, and place it in the hole, and fancy that the gold is still lying there. It will do you quite the same service; for when the gold was there, you had it not, as you did not make the slightest use of it."

Miser Question 1

This first question is a closed constructed-response item (the only example of this item format response in the released set of items). This question requires students to *integrate and interpret* the text. They were asked to put a series of statements about the story into the correct order. This makes the item an easy task with a difficulty of 373 score points, located in the middle of Level 1a. The following example achieved credit for the response.

Read the sentences below and number them according to the sequence of events in the text.

The miser decided to turn all his money into a lump of gold.	1
A man stole the miser's gold.	3
The miser dug a hole and hid his treasure in it.	2
The miser's neighbour told him to replace the gold with a stone.	4

Miser Question 7

The next question in the 'Miser' unit focused on accessing and retrieving information is one of the easiest items in the reading literacy pool, located in the middle of Level 1b with a difficulty of 310 score points. Students were asked to locate information that was explicitly stated at the beginning of the short piece of text and make the connection between the miser selling all that he had and buying gold, as shown in the following response.

How did the miser get a lump of gold?

He sold all that he had and bought a lump of gold.
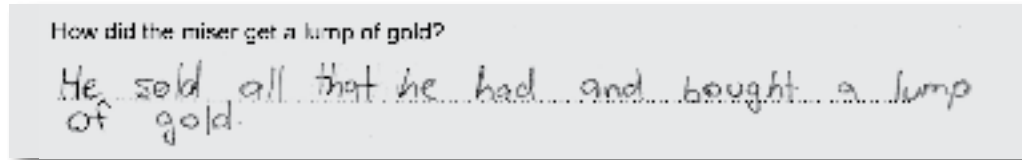
Miser Question 5

This item assessed students' skills in integrating and interpreting. Students were presented with a part of a conversation between two people who have conflicting interpretations of the story. Their task in responding to this item was to relate a detail of the fable to the main idea.

Here is part of a conversation between two people who read "The miser and his gold".

The neighbour was nasty. He could have replaced the gold with something better than a stone.

Speaker 1

No he couldn't. The stone was important in the story.

Speaker 2

What could Speaker 2 say to support his point of view?

To achieve a full credit response, students must make sense of the neighbour's speech in the story and then express the idea that wealth has no value unless it is used. The following example shows a response that received full credit.

That the gold was only worth as much as the stone because he made no use of it
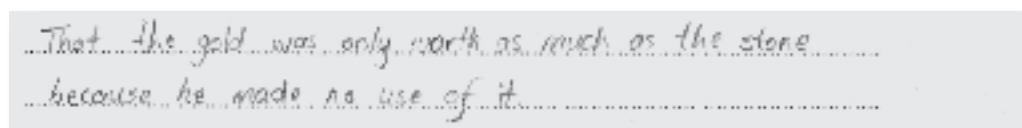
This item was the most difficult of all the 'Miser' questions, placed at Level 3 with a difficulty of 548 score points. Responses that were insufficient or vague, such as the response below, were given no credit.

The stone is like a shape of gold and it is heavy like gold too.

Level 1 & 2 Example: Blood donation notice

The 'blood donation notice' unit features a persuasive piece of writing about blood donation, set in a context that students are familiar with and come into contact with regularly. Students were asked three questions relating to this unit. The first question, a multiple-choice item (not shown here), asked students to recognise the main purpose of an advertisement.

BLOOD DONATION NOTICE

Blood donation is essential.

There is no product that can fully substitute for human blood. Blood donation is thus irreplaceable and essential to save lives.

In France, each year, 500,000 patients benefit from a blood transfusion.

The instruments for taking the blood are sterile and single-use (syringe, tubes, bags).

There is no risk in giving your blood.

Blood donation:

It is the best-known kind of donation, and takes from 45 minutes to 1 hour.

A 450-ml bag is taken as well as some small samples on which tests and checks will be done.

- A man can give his blood five times a year, a woman three times.
- Donors can be from 18 to 65 years old.

An 8-week interval is compulsory between each donation.

Blood donation notice Question 8

The second question in the 'blood donation notice' unit assessed the aspect *integrate and interpret* and required the student to make links across the text to reach a conclusion. Students needed to carefully match the case described in the question stem with the correct pieces of information (the age and sex of the prospective donor, the number of times a person is allowed to give blood and the suggested interval between donations). The last piece of required information is to stipulate under what conditions the young woman is allowed to give blood again. The following response is an example of a correct response. This question had a difficulty of 438 score points, located around the middle of Level 2.

An eighteen-year-old woman who has given her blood twice in the last twelve months wants to give blood again. According to "Blood Donation Notice", on what condition will she be allowed to give blood again?

A woman can only give her blood 3 times a year and an 8-week interval is compulsory between each donation.

Blood donation notice Question 9

This item is a multiple-choice question that asks students to recognise the persuasive purpose of a phrase in the advertisement. Students need to consider the wider context of what is meant by a statement in the stimulus and recognise the author's motive for including it. For this reason, the question has been assigned the aspect of *reflect and evaluate*. This item was relatively easy, located in the lower half of Level 1a with a difficulty of 368 score points.

The text says: "The instruments for taking the blood are sterile and single-use ... "

Why does the text include this information?

A   To reassure you that blood donation is safe.
B   To emphasise that blood donation is essential.
C   To explain the uses of your blood.
D   To give details of the tests and checks.

Level 1-4 Examples: Balloon

The stimulus 'Balloon' is an example of a *non-continuous text*, presented with different kinds of graphs and captions with a minimum of text. Items in this unit ranged from levels 1a to 4, were set in an educational context and involved all reading aspects.
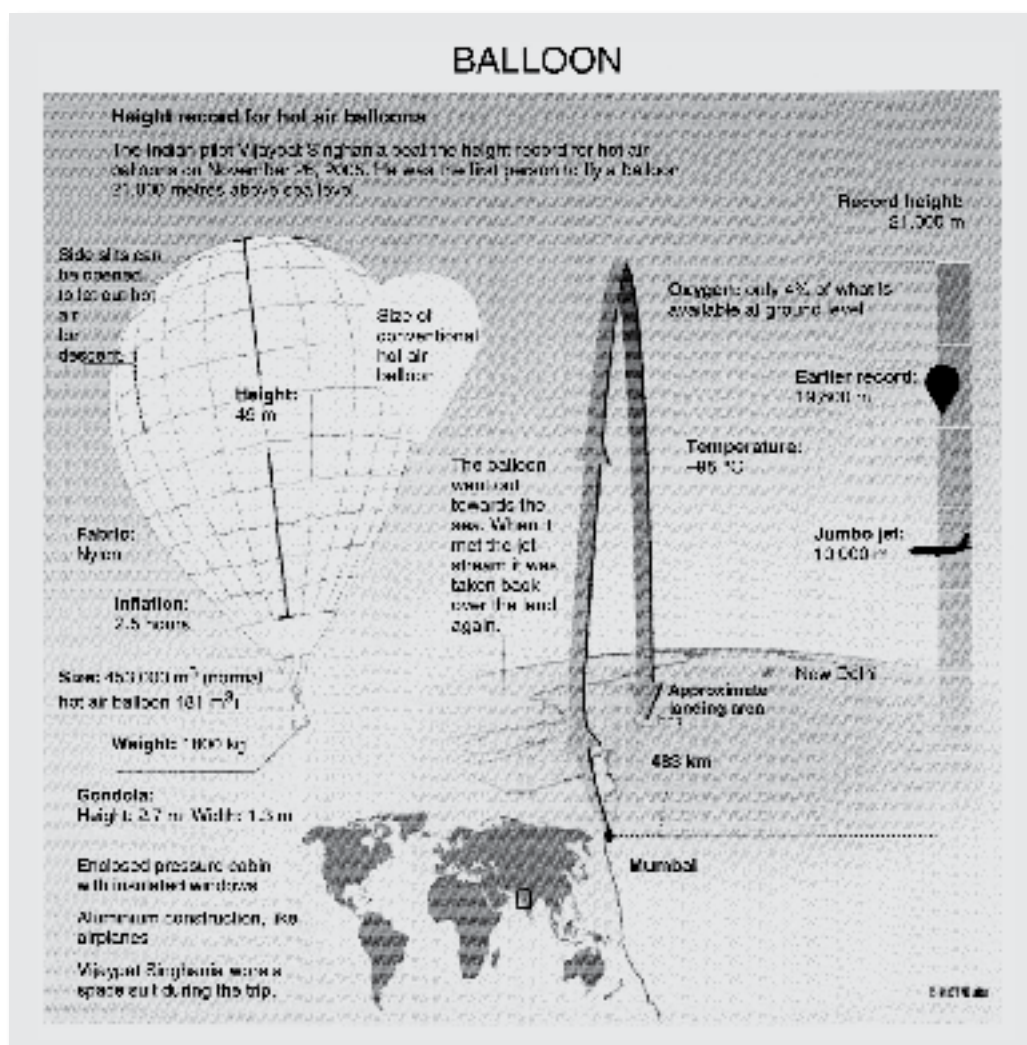
Balloon Question 8

The first question is a multiple-choice item requiring students to recognise the main idea of a diagrammatic descriptive text, which is prominently displayed and repeated throughout the text, including in the title.

The item is classified as *integrate and interpret* because it involves forming a broad understanding of the text. It is the easiest of the items in this unit, placed about the middle of Level 1a with a difficulty of 370 score points.

Balloon Question 3

In this task, as shown below, students were asked to locate two pieces of information that are explicitly stated in the stimulus.

> Vijaypat Singhania used technologies found in two other types of transport. Which types of transport?
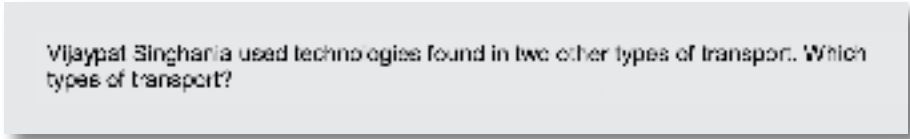
This is the only item from the released set that shows an example of a partial credit item. The coding rules for this item are shown below to illustrate how an open response was coded, including examples of acceptable responses.

BALLOON scoring – Question 3

| **Full Credit** |
| Refers to *BOTH aeroplanes AND spacecraft* (in either order). *[may include both answers on one line]* |
| ▸ 1. Aircraft
2. Spacecraft |
| ▸ 1. Aeroplanes
2. space ships |
| ▸ 1. Air travel
2. space travel |
| ▸ 1. Planes
2. space rockets |
| ▸ 1. jets
2. rockets |
| **Partial Credit** |
| Refers to EITHER *airplanes OR spacecraft*. |
| ▸ spacecraft |
| ▸ space travel |
| ▸ space rockets |
| ▸ rockets |
| ▸ Aircraft |
| ▸ Aeroplanes |
| ▸ Air travel |
| ▸ jets |
| **No Credit** |

Code 0:	Gives an *insufficient or vague* response.
	▸ Things that fly.
	Shows *inaccurate comprehension* of the material or gives an *implausible or irrelevant* response.
	▸ Space suits. *[not a type of transport]*
	▸ Jumbos. *[The specificity is not justified by the text – the reference to jumbo jets is not relevant to this question.]*
	▸ Airships.
Code 9:	Missing.

This question assesses the aspect *access and retrieve*. Locating the answers, in the bottom left corner of the stimulus, was not a challenging task for students. One type of transport could be transcribed from the text; however, for the second type of transport students were required to associate the 'space suit' with a category of transport in order to obtain the correct response.

The following response received full credit because the student listed the two required types of transport (terms paraphrasing 'aeroplanes' or 'spacecraft' were accepted). Achieving full credit had a difficulty of 595 score points, and placed it close to the Level 4 and 5 boundary. If a response included only one type of transport, then the student received partial credit, which was located in the upper half of Level 2 with a difficulty of 449 score points.

1. Airplanes
2. Spaceships

Balloon Question 4

The next question in the 'Balloon' unit was another open constructed-response item. Students were required to reflect on and evaluate the content of a text when they were asked:

What is the purpose of including a drawing of a jumbo jet in this text?

In order to gain credit for this item, students needed to recognise the persuasive intent of including an illustration of a jumbo jet. Student responses referring to the height of the balloon or to the record, as shown in the following two examples, were awarded credit. This task was placed at Level 3 with a difficulty of 510 score points.

To show the level at which a large plane can fly at and how much higher the hot air balloon reached.

this was to put this record in proportion of how high it was

Balloon Question 6

Although the intent of this item was to reflect on and evaluate the context of a text, this is an easier task, with a difficulty of 411 score points (the lower end of Level 2). This item requires students to recognise and use linked illustrations in a diagrammatic descriptive text.
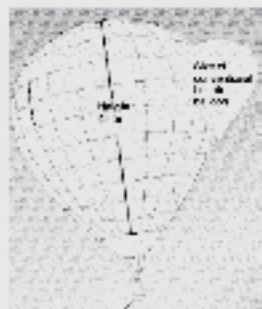
Why does the drawing show two balloons?

A   To compare the size of Singhania's balloon before and after it was inflated.
B   To compare the size of Singhania's balloon with that of other hot air balloons.
C   To show that Singhania's balloon looks small from the ground.
D   To show that Singhania's balloon almost collided with another balloon.

Level 3 Example: Telecommuting

The stimulus for 'Telecommuting' consists of two short pieces of text that offer contrasting opinions on telecommuting. A footnote provided the definition of telecommuting for those 15-year-old students who may have been unfamiliar with this term. The topic is set in an occupational context and the purpose of the stimulus was to persuade readers to their point of view.

TELECOMMUTING

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 Niles 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 1

The first question in the unit was a multiple-choice item that required students to recognise the relationship between two short argumentative texts. To respond correctly to the question, students had to form a global understanding of each of the short texts, and then identify the relationship between them. This item had a difficulty of 537 score points and was placed at Level 3.

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.

In each of the graphs in this chapter, the bars represent the difference between the proportion of students in the country that answered correctly and the OECD average proportion of students that answered correctly. Countries are asterisked (*) if this proportion is <u>significantly</u> different to the OECD average, and bars are shaded dark purple if the proportion is <u>significantly</u> different to the proportion of Australian students.
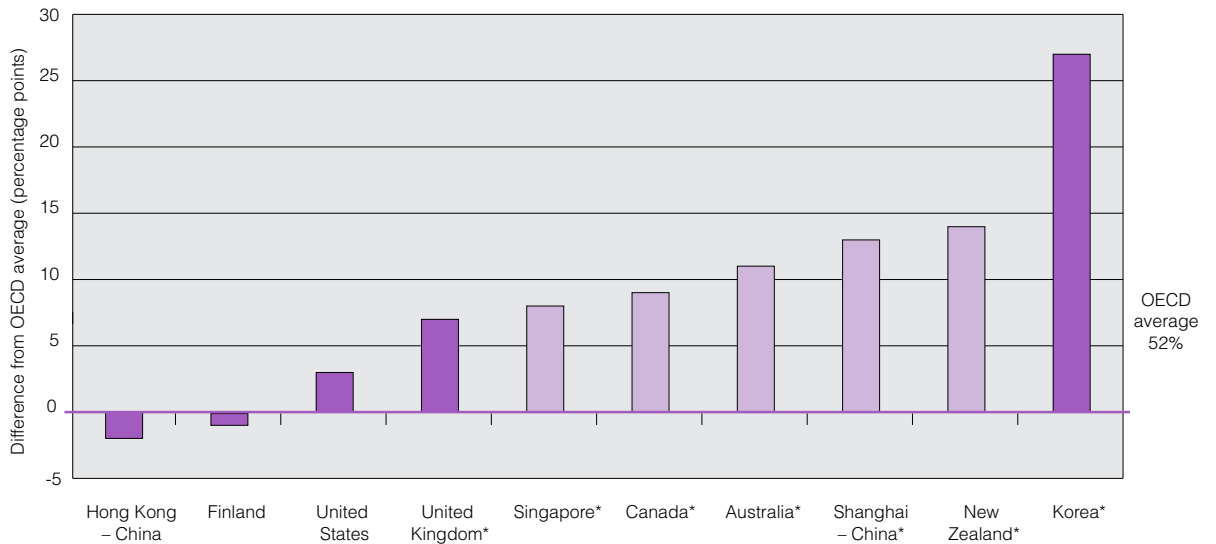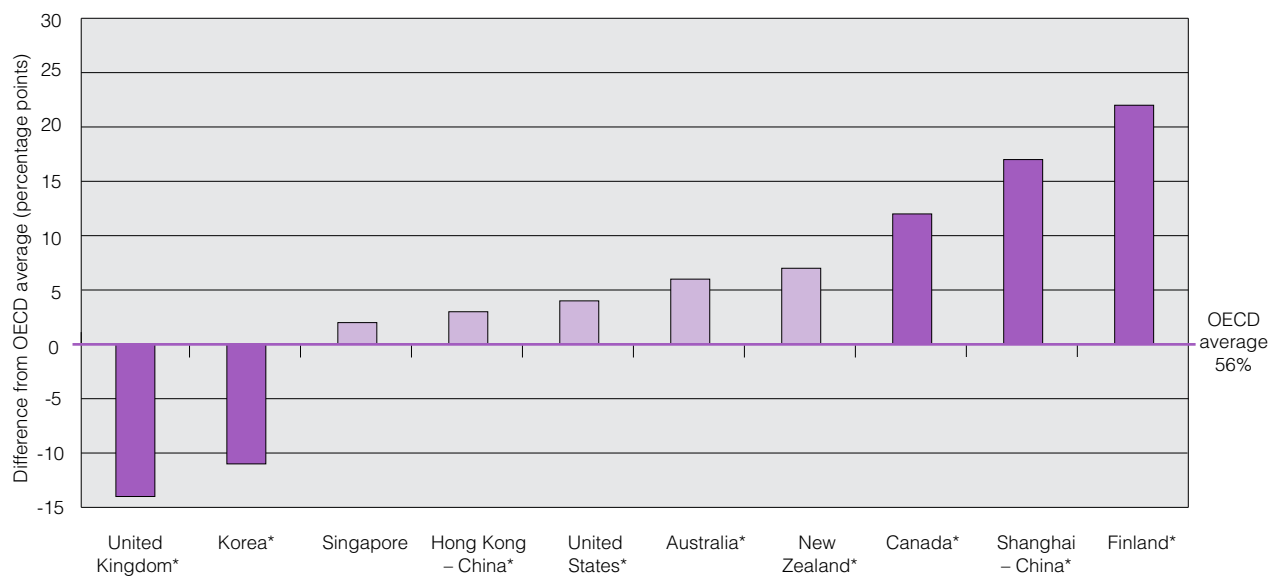

Figure 3.2 Proportion of students providing correct response to Telecommuting question 1: Australia and comparison countries

◗ About 65 per cent of Australian students answered correctly.
◗ Fewer than half of the students in Hong Kong-China but 80 per cent of Korean students answered correctly.

Is this surprising given that both Hong Kong-China and Korea are relatively high performing countries?

Telecommuting Question 7

This question relied on students using their prior knowledge to provide an example that fits a category described in a text; in this case, a profession in which it would be difficult to telecommute. Students needed to link their comprehension of the text with outside knowledge, as no specific profession was mentioned in the text.

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

Telecommuting Question 7 is an example of a reflect and evaluate item. This kind of task was a relative strength for Australian students compared to access and retrieve and integrate and interpret tasks.

The coding rules for this item are shown below.

TELECOMMUTING scoring – Question 7

Full Credit

Identifies a kind of work and gives a plausible explanation as to why a person who does that kind of work could not telecommute. Responses MUST indicate (explicitly or implicitly) that it is necessary to be physically present for the specific work.

▶ Building. It's hard to work with the wood and bricks from just anywhere

▶ Sportsperson. You need to really be there to play the sport.

▶ Plumber. You can't fix someone else's sink from your home!

▶ Digging ditches because you need to be there.

▶ Nursing – it's hard to check if patients are ok over the Internet

No Credit

Identifies a kind of work but includes no explanation OR provides an explanation that does not relate to telecommuting.

▶ Digging ditches

▶ Fire fighter

▶ Student

▶ Digging ditches because it would be hard work.
   [Explanation does not show why this would make it difficult to telecommute.]

OR Gives an insufficient or vague response

▶ You need to be there.

OR Shows inaccurate comprehension of the material or gives an implausible or irrelevant response.

▶ Manager. No-one takes any notice of you anyway. *[irrelevant explanation]*

To achieve full credit, as shown in the following two examples, students had to identify a profession and provide a plausible explanation as to why a person who does that kind of work could not telecommute.

A doctor because they need to examine their patients physically.

Farming, as the job requires hands-on and physical work, rather than transmitting data

Students did not receive credit for a response that identified an occupation but did not provide an explanation why this would make it difficult to telecommute. This item was placed around the middle of Level 3 with a difficulty of 514 score points.

Figure 3.3 Proportion of students providing correct response to Telecommuting question 7: Australia and comparison countries

◗ A little over 60 per cent of Australian students answered this item correctly.

Again, Korea did not perform as well as would be expected on this item.

Level 3 & 4 Examples: Mobile phone safety

The 'Mobile phone safety' unit assesses two aspects of the PISA reading literacy assessment — *integrate and interpret* and *reflect and evaluate*. The stimulus, set in a public context/situation, and sourced from a website, uses *non-continuous texts* in the form of two tables and key points, as shown below.

MOBILE PHONE SAFETY

Are mobile phones dangerous?

	Yes	No
1.	Radio waves given off by mobile phones can heat up body tissue, having damaging effects.	Radio waves are not powerful enough to cause heat damage to the body.
2.	Magnetic fields created by mobile phones can affect the way that your body cells work.	The magnetic fields are incredibly weak, and so unlikely to affect cells in our body.
3.	People who make long mobile phone calls sometimes complain of fatigue, headaches, and loss of concentration.	These effects have never been observed under laboratory conditions and may be due to other factors in modern lifestyles.
4.	Mobile phone users are 2.5 times more likely to develop cancer in areas of the brain adjacent to their phone ears.	Researchers admit it's unclear this increase is linked to using mobile phones.
5.	The International Agency for Research on Cancer found a link between childhood cancer and power lines. Like mobile phones, power lines also emit radiation.	The radiation produced by power lines is a different kind of radiation, with much more energy than that coming from mobile phones.
6.	Radio frequency waves similar to those in mobile phones altered the gene expression in nematode worms.	Worms are not humans, so there is no guarantee that our brain cells will react in the same way.

Key Point

Conflicting reports about the health risks of mobile phones appeared in the late 1990s.

Key Point

Millions of dollars have now been invested in scientific research to investigate the effects of mobile phones.

Mobile phone safety Question 2

The first question in this unit, a multiple-choice item, asked students to recognise the purpose of a section (a table) in an expository text.

This task was classified as belonging to the *integrate and interpret* aspect, and is an example of a more difficult item associated with addressing the broad understanding category. The 'key points' in the text are related to, but do not summarise, the information in the body of the two main tables,

> Australian students were relatively stronger at completing non-continuous tasks. Mobile phone safety Question 2 is an example of a non-continuous item.

so the student needs to focus on what appears as a peripheral part of the text structure. To achieve a full credit, students need to establish a hierarchy among the ideas presented and choose the one that is most general and overarching. This item was located at Level 4 with a difficulty of 561 score points.

What is the purpose of the **Key points?**

A   To describe the dangers of using mobile phones.
(B) To suggest that debate about mobile phone safety is ongoing.
C   To describe the precautions that people who use mobile phones should take.
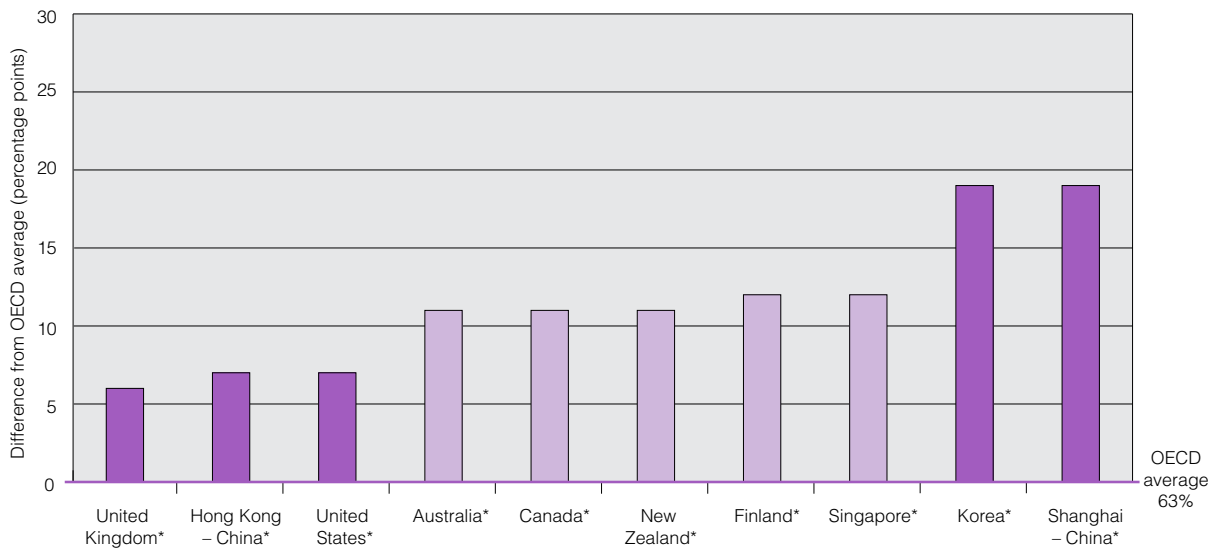D   To suggest that there are no known health problems caused by mobile phones.
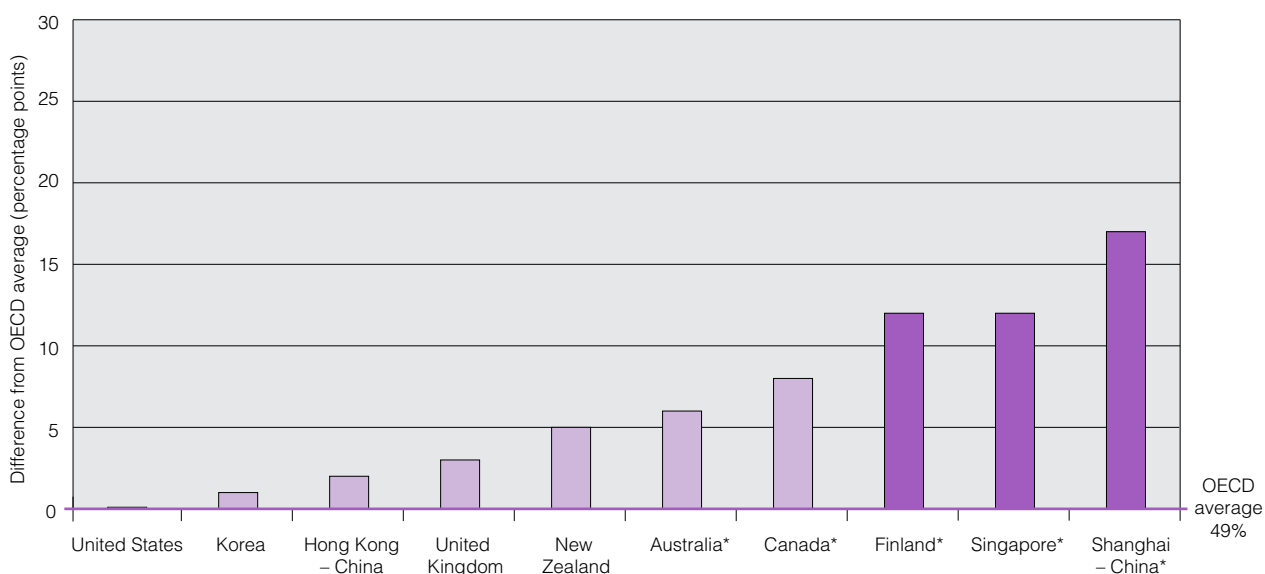
Figure 3.4 Proportion of students providing correct response to Mobile phone safety question 2: Australia and comparison countries

◗   Just over half the Australian students answered this item correctly.

◗   There were no gender differences in Australia on this item.

NO gender differences in Australia on this item!

Mobile phone safety Question 6

This is another item in which the student needed to *reflect* on and *evaluate* the content of a text. Students were required to use their prior knowledge to reflect on information presented in a text. To obtain a correct response, students had to provide a factor in modern lifestyles that could be related to fatigue, headaches or loss of concentration. The following three examples received full credit.

Look at Point 3 in the **No** column of the table. In this context, what might one of these 'other factors' be? Give a reason for your answer.

However, no credit was given to answers that provided vague, insufficient or irrelevant responses, such as the response presented below. This item had a difficulty of 526 score points and was thus located in the upper half of Level 3.
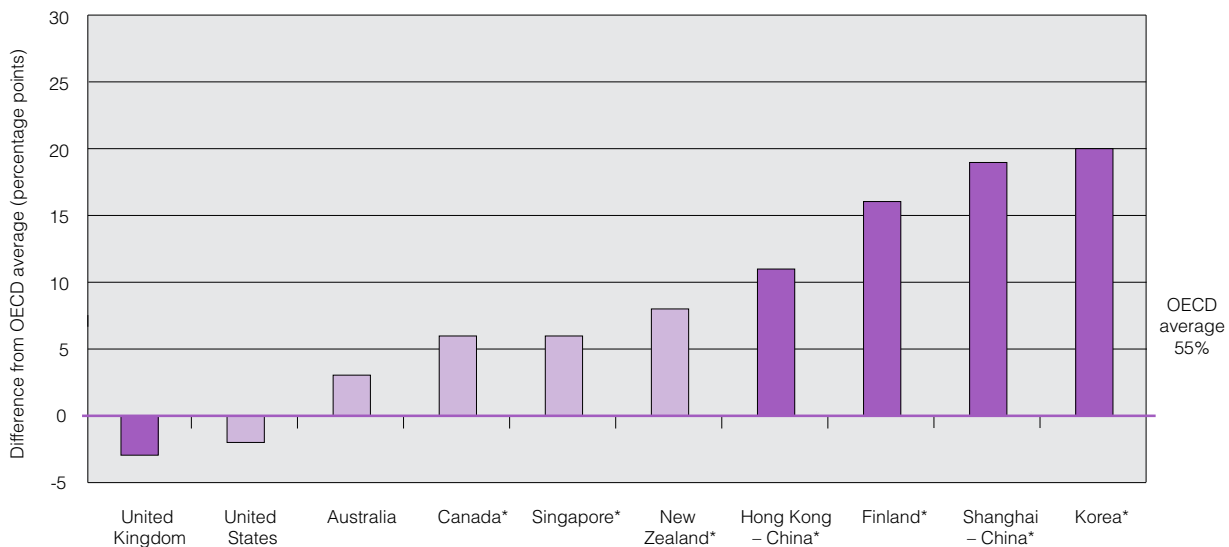
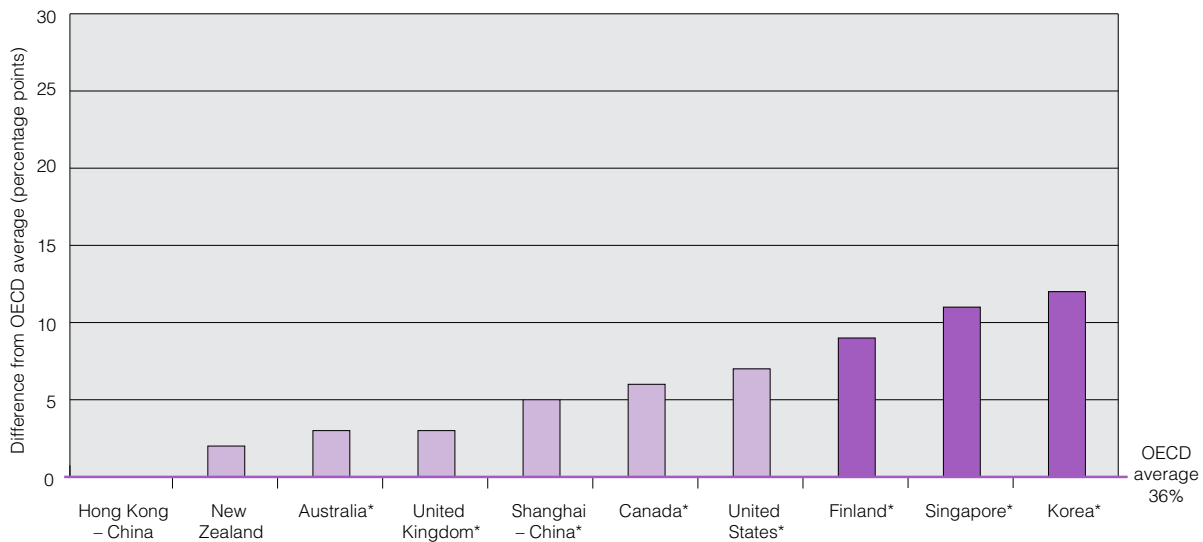Figure 3.5 Proportion of students providing correct response to Mobile phone safety question 6: Australia and comparison countries

◗ Korean students were much stronger on this item than on the previous item.

◗ A similar proportion of Australian students answered this item and the previous item correctly.

Mobile phone safety Question 9

This question focused on the *integrate and interpret* aspect. Students were directed to look at the second table in this task and asked to recognise its underlying assumption (which is located in the last boxed 'Key Point'). This item was placed at Level 3, with a difficulty of 488 score points.

Look at the table with the heading **If you use a mobile phone …**

Which of these ideas is the table based on?

A   There is no danger involved in using mobile phones.
B   There is a proven risk involved in using mobile phones.
(C)   There may or may not be danger involved in using mobile phones, but it is worth taking precautions.
D   There may or may not be danger involved in using mobile phones, but they should not be used until we know for sure.
E   The Do instructions are for those who take the threat seriously, and the Don't instructions are for everyone else.

Figure 3.6 Proportion of students providing correct response to Mobile phone safety question 9: Australia and comparison countries

◗   This item was fairly straightforward for the comparison countries, however it is interesting that Australian students outperformed those in Hong Kong-China on this item, and at a similar level to those in Canada and Singapore.

Mobile phone safety Question 11

The next question, a multiple-choice item, assessed students' skills in *reflecting* on and *evaluating* the content of a text. Students were required to recognise the relationship between a generalised statement external to the text and a pair of statements in a table.

"It is difficult to prove that one thing has definitely caused another."

What is the relationship of this piece of information to the Point 4 **Yes** and **No** statements in the table **Are mobile phones dangerous?**

A   It supports the Yes argument but does not prove it.
B   It proves the Yes argument.
C   It supports the No argument but does not prove it.
D   It shows that the No argument is wrong.

This item was the most difficult task in this unit, placed on the boundary of Level 4 and 5, with a difficulty of 604 score points. The difficulty was associated with several factors: the stem statement using abstract terminology, working out which of the two tables was relevant to the task and which point to look at, assimilating the structure of the relevant table, discerning precisely how the NO statement challenges the YES statement in a particular instance, and matching the relationship between the YES and NO statements with one of the options in the multiple-choice format.

Figure 3.7 Proportion of students providing correct response to mobile phone safety question 11: Australia and comparison countries

Shanghai-China's performance on this item was relatively weaker than on the other items, with a similar proportion of students to Australia getting this item correct. Given their overall performance, can you think of any reason this might have been so much more difficult for these students?

Mobile phone safety questions 6 and 11 require students to reflect and evaluate a text. Reflecting and evaluating skills were shown to be a relative strength of Australian students in PISA.

Why do you think Australians students performed better on reflecting and evaluating tasks than on accessing and retrieving tasks, or integrating and interpreting tasks?

Do you think this is reflective of student skills in your class? Are there particular things that could be done differently in class to improve these skills?'

Level 2 - 6 Examples: The play's the thing

The stimulus for the unit 'The play's the thing' is the beginning of a play by the Hungarian dramatist Ferenc Molnár, and involves a conversation between three characters about the relationship between life and art and the challenges of writing for the theatre. This text is quite long in comparison to other stimuli in PISA 2009. It is set in a personal context and all of the tasks require students to *integrate and interpret* the text, assessing their skills across three different proficiency levels.

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
90   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
95   have no name, I have no money.

TURAI

But you are young.

GAL

And gifted.

100   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.

105   *They all sit down.*

TURAI

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

110   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
115   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 3

This question requires a high level of interpretation to define the meaning of the question's terms in relation to the text. The question asks what the characters were doing just before the curtain went up, and so students need to distinguish between the characters and the actors. The response below achieved full credit. Responses referring to the actors, such as 'off the stage', 'talking loudly behind a door' or 'thinking about how to begin the play' were scored as incorrect. The complexity of this item placed it in the highest proficiency level (Level 6) with a difficulty of 730 score points.

Australian students were relatively weaker on integrate and interpret tasks compared to reflect and evaluate tasks. The play's the thing Question 3 is an example of a integrate and interpret task.

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

They were having dinner and drinking champagne.

Figure 3.8 shows that only around 10 per cent of Australian students, significantly lower than the OECD average, answered this question correctly. As only 13 per cent of Australian students achieved this level in general, this is not surprising.
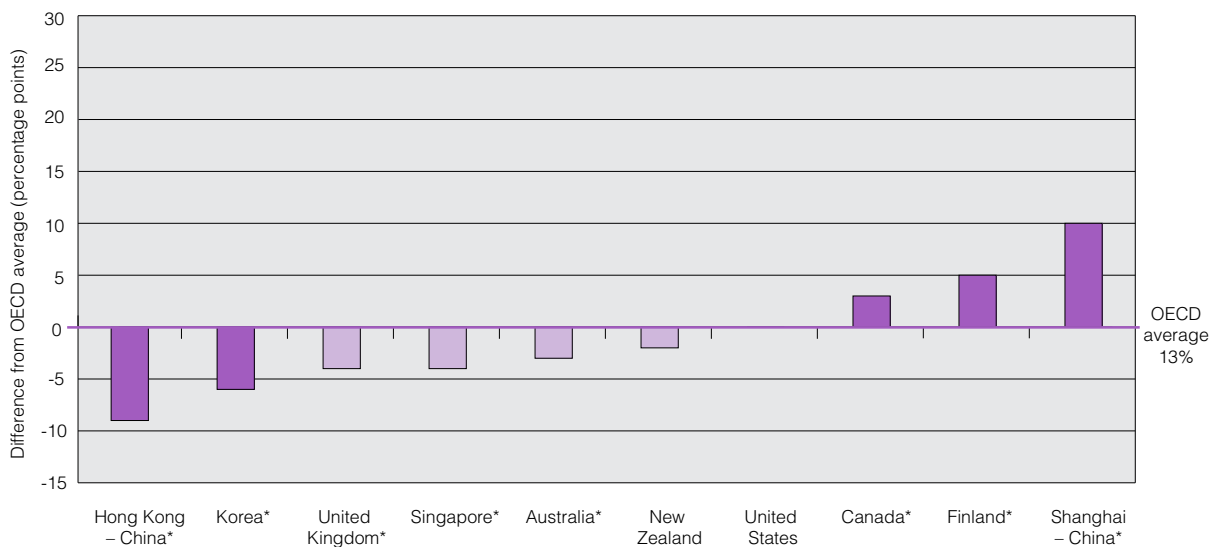

Figure 3.8 Proportion of students providing correct response to The play's the thing question 3: Australia and comparison countries

◗ Only one in every 10 students answered this item correctly, which was significantly lower than the proportions of students from Canada, the United States, Finland and Shanghai-China.

◗ The proportion of Australian students who provided a correct response was greater than the proportions of students from Hong Kong-China and Korea.

The play's the thing Question 4

The second question in the unit was an easier item, placed near the Level 2 and Level 3 boundary (with a difficulty of 474 score points). The question stem includes lines quoted directly from the text so the student can refer to the relevant section in the play. The student then needs to understand the context in which the line is spoken in order to respond correctly to the item.

Figure 3.9 Proportion of students providing correct response to The play's the thing question 4: Australia and comparison countries

◗ At almost 70 per cent, the proportion of students from Australia who answered this question correctly was signicantly higher than the proportions of students from the United Kingdom, the United States and Hong Kong-China.

The play's the thing Question 7

The final question in this unit was a multiple-choice item that requires students to recognise the conceptual theme of a play, where the theme is literary and abstract. This item had a difficulty of 556 score points and was placed at Level 4.

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.
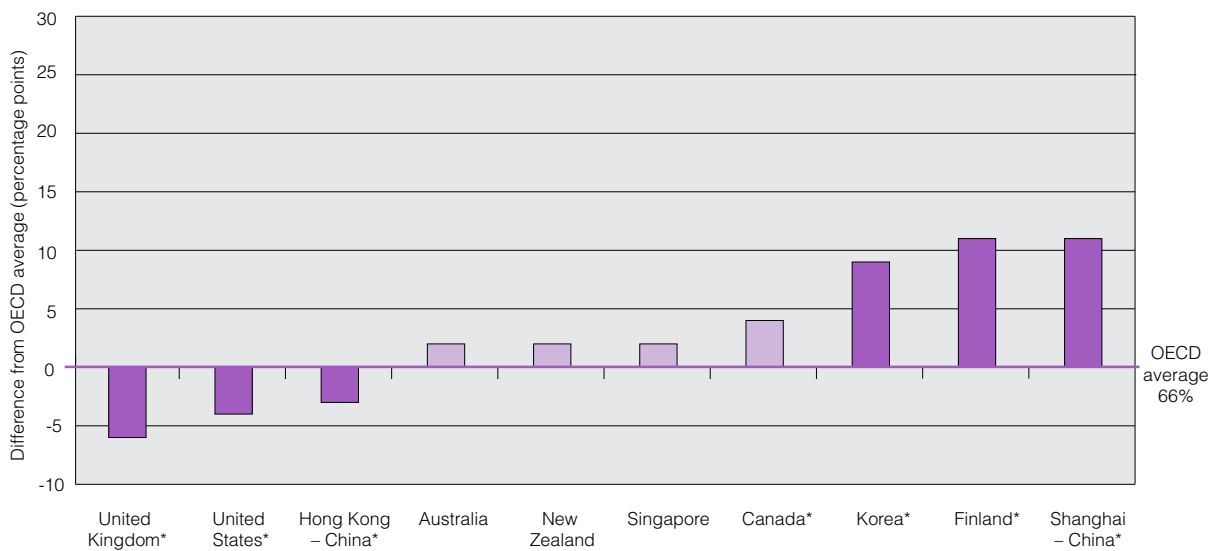(D)   He is using the characters to act out one of his own creative problems.
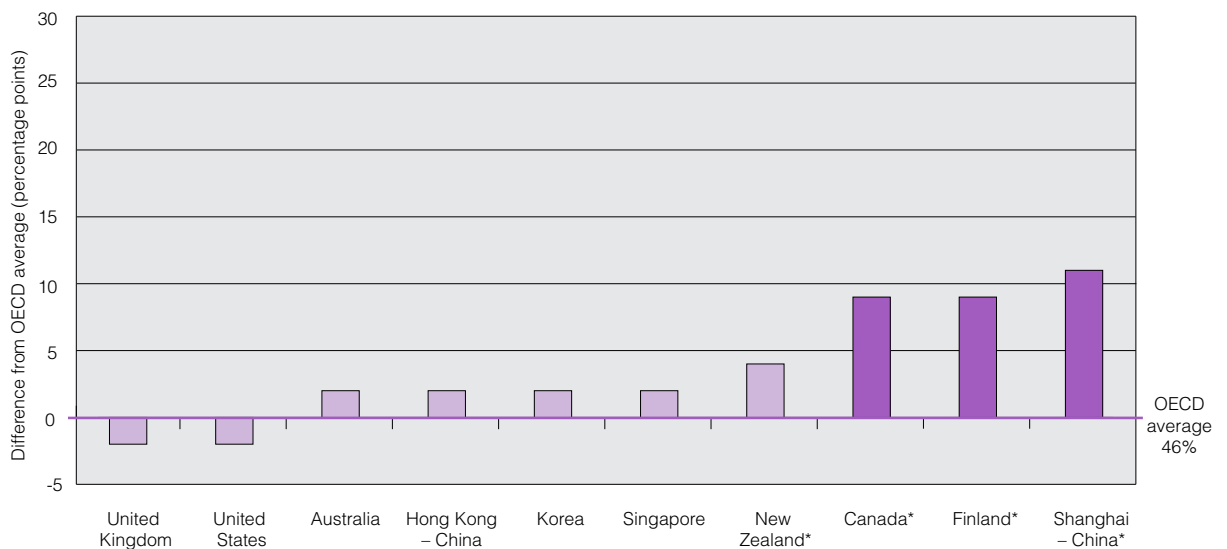
Figure 3.10 Proportion of students providing correct response to The play's the thing question 7: Australia and comparison countries

◗ Just under half of the Australian students answered this multiple-choice question correctly, which was a signicantly lower proportion of students than from Canada, Finland and Shanghai-China.

Other findings

◗ On all but two items (Mobile Phone Safety Questions 2 and 11), female students significantly outperformed male students. Both were multiple-choice items, one was from the *integrate and interpret* aspect, the other *reflect and evaluate.*

◗ On all but two items (Mobile Phone Safety Question 9 and The Play's the Thing Question 3) there were no significant differences in the proportion of responses by language background. On these two items, English-speaking students performed better than those from a language background other than English.

Reading habits, learning strategies

A wealth of research has demonstrated that students' reading habits can impact on performance in reading-related activities. The types of learning strategies that students adopt in these activities can further influence their performance and determine whether they are engaging in deep or surface-level learning. Students who are highly engaged in a wide range of reading activities and use learning strategies that facilitate deeper levels of learning are more likely than other students to be effective learners and perform well at school.

This chapter provides some information from the national PISA report on students' reading habits; in particular, students' enjoyment of reading, the time they spend on reading for enjoyment purposes, and the diversity of the reading materials they engage with. It also summarises findings from the national report about the strategies that have a strong relationship with achievement in reading.

Enjoyment of reading

In the PISA 2009 study, students' enjoyment of reading was measured with regard to the following 11 statements:

◗   I read only if I have to

◗   Reading is one of my favourite hobbies

◗   I like talking about books with other people

◗   I find it hard to finish books

◗   I feel happy if I receive a book as a present

◗   For me, reading is a waste of time

◗   I enjoy going to a bookstore or a library

◗   I read only to get information that I need

◗   I cannot sit still and read for more than a few minutes

◗   I like to express my opinions about books I have read

◗   I like to exchange books with my friends

Students rated their level of agreement with each item on a four-point Likert scale – *strongly disagree, disagree, agree* and *strongly agree*. The Enjoyment of Reading Index was created using these 11 items and values were standardised so that the mean of zero represented the mean of the OECD student population. Higher scores on the index indicated that students responded with higher levels of reading enjoyment than on average across the OECD.

Figure 4.1 shows the mean scores for Australia and each of the comparison countries, both overall and by gender. This is important, as in many countries the positive ratings of enjoyment by female students are counterbalanced by the negative ratings of their male peers. In the case of Australia, for example, the index score for females is 0.31 but for males is -0.33. This can be read as females expressing higher levels of reading enjoyment and males lower levels of enjoyment than the OECD average.

While females scored higher on this index in every country, in Shanghai-China and Hong Kong-China male students also registered positive ratings of enjoyment of reading. The largest gender difference was with Finnish students and the lowest with Korean students.
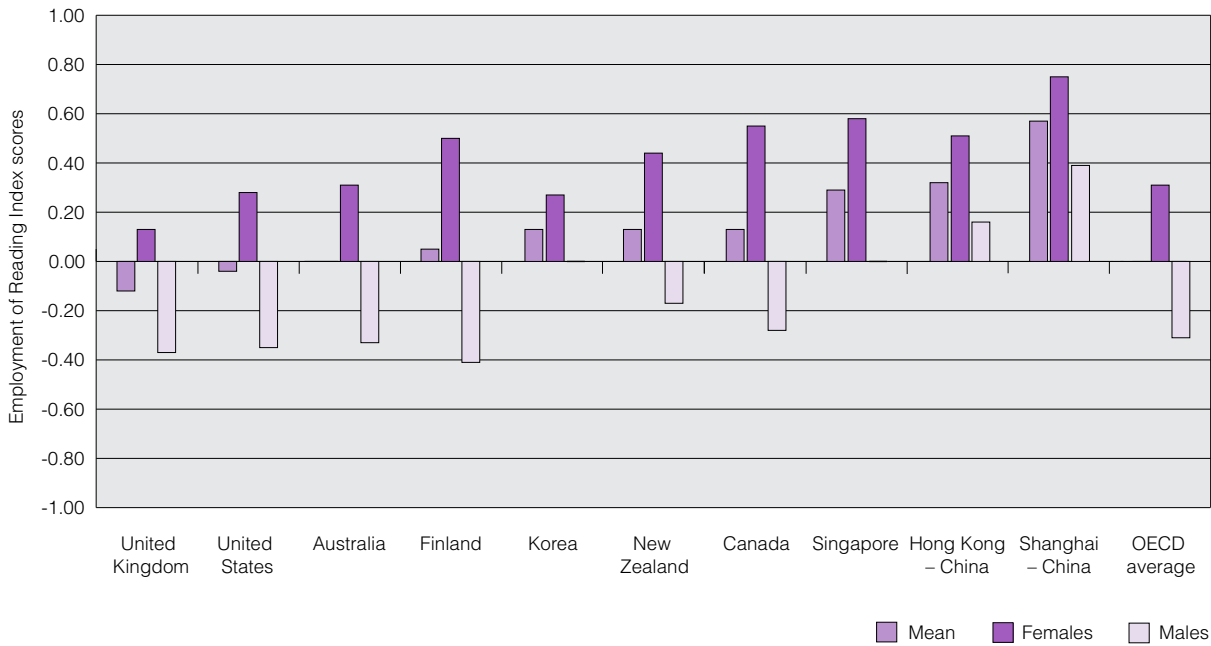

Figure 4.1 Enjoyment of reading index scores: Australia and comparison countries by gender

To bring more meaning to the index, Figure 4.2 shows the proportion of Australian students who Agree or Strongly Agree to the items making up the index.
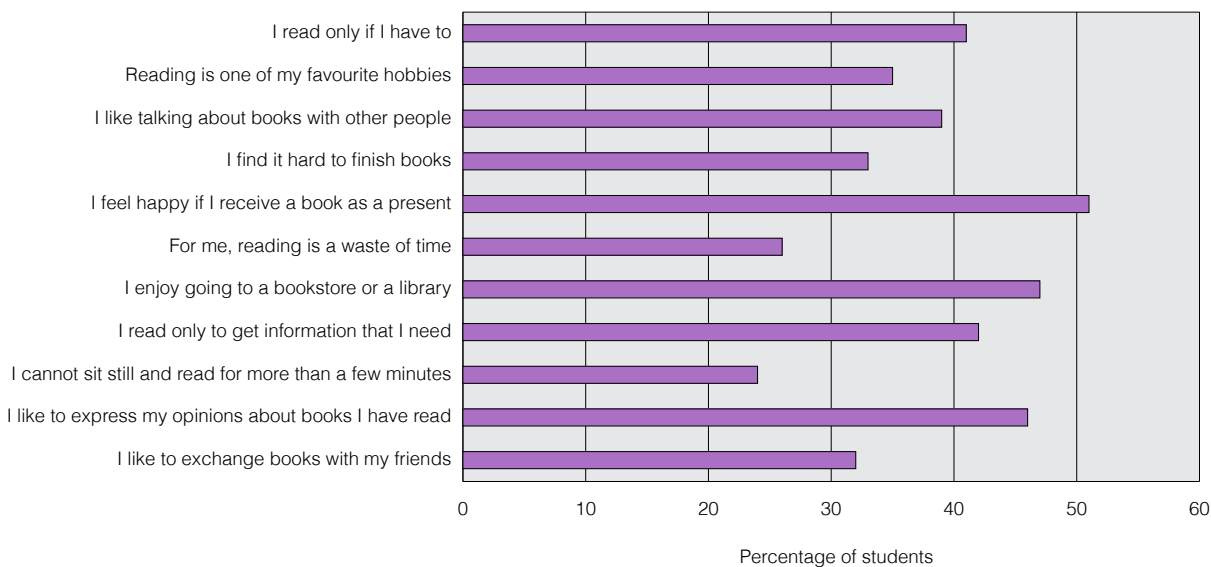

Figure 4.2 Percentage of students Agreeing or Strongly Agreeing to Enjoyment of Reading items

Reading for enjoyment

Research has documented a strong link between reading practices (how much people read at work and at home) and reading proficiency among adults.[6] The time that students report reading for enjoyment represents a behavioural indicator of their attitude towards reading and complements data like the Enjoyment of Reading Index. The PISA 2009 project asked students, *"About how much time do you spend reading for enjoyment?"*

Figure 4.3 shows a summary of Australian students' responses to this question in the bars, and the line graph shows the PISA reading scores for each of the groups. This shows clearly the relationship between enjoyment of reading and achievement, and also that the gender gap closes for those male students who read more than one hour a day for enjoyment – unfortunately only about 10 per cent of males report that they enjoy reading to this extent.

> How can we encourage parents and homes to encourage reading?
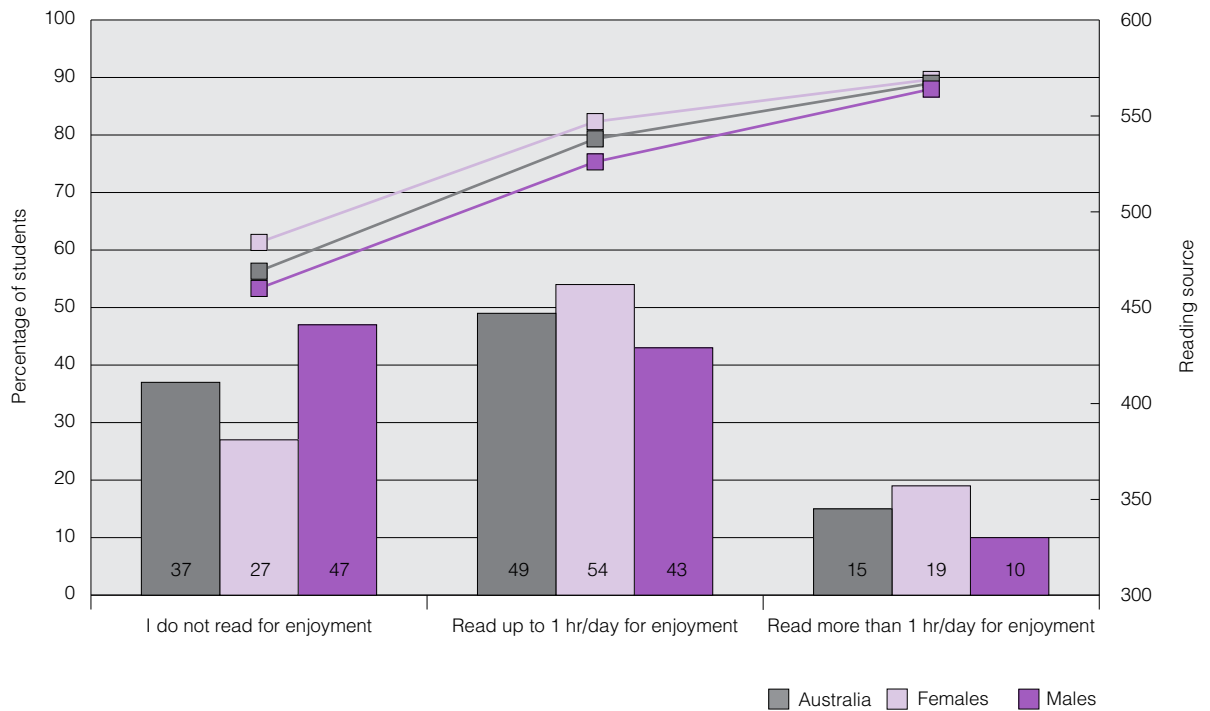
Figure 4.3 Relationship between Time reading for enjoyment and achievement

About one-third of Australian 15-year-old students reported that they do not read for pleasure at all. This varies across Australia, as well as across the different countries involved in PISA. Twice the proportion of Australian students from a low socioeconomic background as those from a high socioeconomic background (33% vs 17%) report that they do not read for pleasure.

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6   For example, see OECD and Statistics Canada (2000) *Literacy in the information age: Final report of the International Adult Literacy Study*. Paris: OECD.

What do students read?

Students were asked about the diversity of material that they read. PISA 2009 asked how often students read the following materials *because they want to*:

◗ Magazines

◗ Comics

◗ Fiction (novels, narrative, stories)

◗ Non-fiction books

◗ Newspapers

A "Diversity of Reading" index was created and, overall, Australian students reported less diversity in their reading habits than the OECD average, with magazines and newspapers being read most frequently. However reading fiction and, to a lesser extent reading non-fiction books, were the only reading items found to correlate positively with achievement.

Figure 4.4 illustrates this relationship. For Fiction in particular, the relationship between reading frequently and achievement is strong and positive.
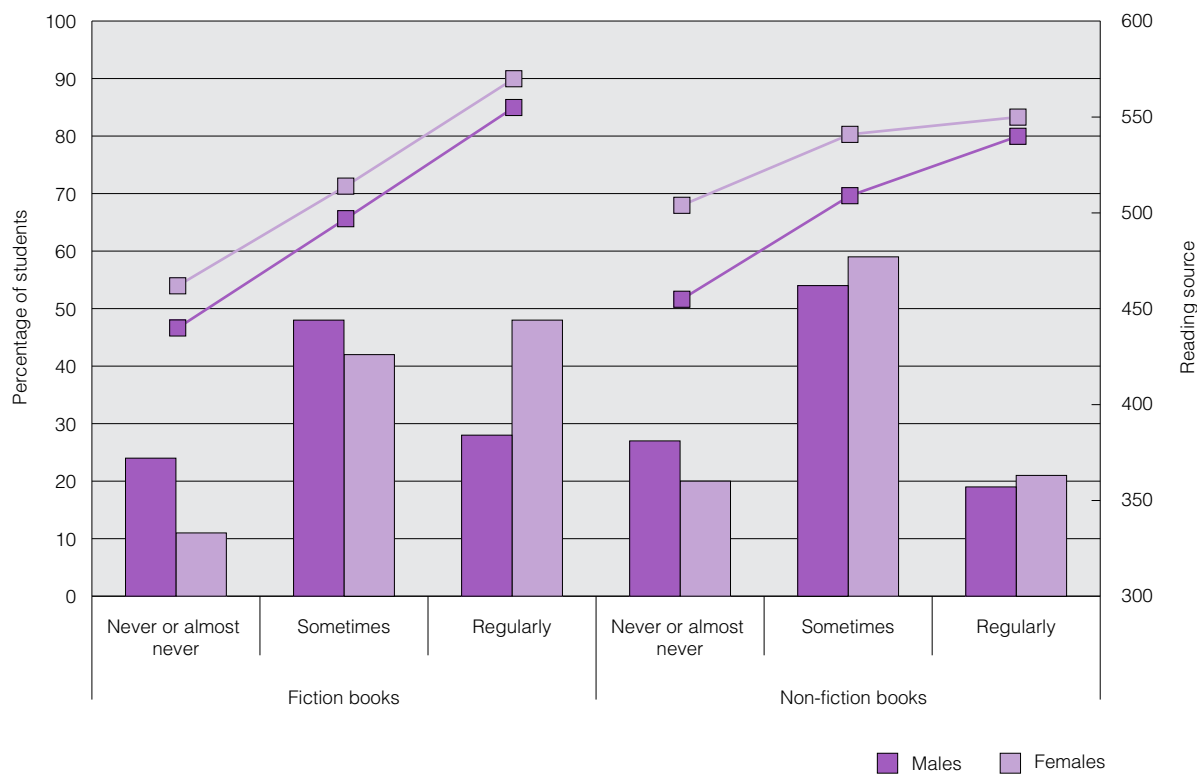

Figure 4.4 Diversity of reading by gender and relationship with reading achievement

Learning strategies

Along with knowledge, skills and attitudes, another important outcome of education is the acquisition of the right strategies for learning – learning how to learn. PISA 2009 asked students about three learning strategies for general learning: memorisation strategies, elaboration strategies and control strategies; and two strategies specifically related to reading literacy: strategies to understand and remember information and strategies to summarise information.

Of these, control strategies were found to have a moderate relationship with achievement, while the two strategies specific to reading literacy were found to have a strong relationship with achievement. Memorisation Strategies– rote learning facts or materials without a deeper understanding of the material, and Elaboration Strategies – strategies that involve students trying to understand material better by relating it to something that they already know, were not found to be particularly useful. This section will show the relationships between the strategies found to be effective and achievement.

Control Strategies

Control strategies in PISA 2009 were defined as the plans students say they use to ensure that they reach their learning goals. These involve determining what one has already learned and working out what one still needs to learn. Students indicated how often they did the following things when studying:

◗ I start by figuring out what exactly I need to learn

◗ I check if I understand what I have read

◗ I try and figure out which concepts I still haven't really understood

◗ I make sure that I remember the most important parts in the text

◗ When I study and I don't understand something, I look for additional items to clarify this

Australian students scored at about the OECD average on the Control Strategies index, and female students were far more likely to use these strategies than male students. Figure 4.5 shows the relationship between use of control strategies and PISA reading score.
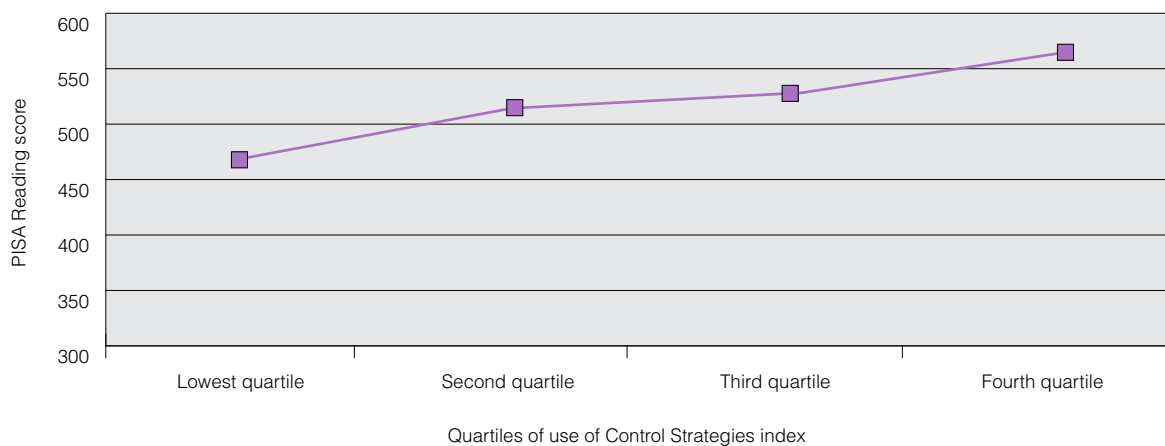

Figure 4.5 Relationship between use of control strategies and reading achievement

Many students may need help to understand how to use control strategies. Can you think of ways that these can be taught explicitly in the classroom?

Metacognitive strategies

PISA 2009 also included two measures of student awareness of effective strategies for reading literacy. Students were presented with a scenario in which they were required to read texts and then perform related tasks – either understand and remember the contents or write a summary of the text.

Understanding and remembering

Students were presented with six different methods that they might use when trying to understand and remember the information in a text:

◗ concentrate on the parts of the text that are easy to understand

◗ quickly read through the text twice

◗ after reading the text, I discuss its contents with other people

◗ underline important parts of the text

◗ summarise the text in my own words

◗ read the text aloud to another person

They were asked to indicate how useful each of these strategies would be, from not useful at all through to very useful. The *Understanding* and *Remembering Strategies* Index was created so that higher scores indicated greater awareness that discussing the contents of the text, underlining important parts and summarising the text in their own words were the more effective strategies for understanding and remembering information. Lower scores on the index were indicative of lower levels of awareness of these effective strategies.

Female students were more likely than their male peers to identify effective strategies for learning, with index scores higher than the OECD average for females and lower than the OECD average for males. Australian students were more likely to find useful the higher level strategies such as "Underline important parts of text" and "Summarise text in own words" than the lower level strategies "Quickly read through text twice" and "Read text aloud to another person".

Figure 4.6 shows the percentage of students who reported finding each of the particular understanding and remembering techniques useful.
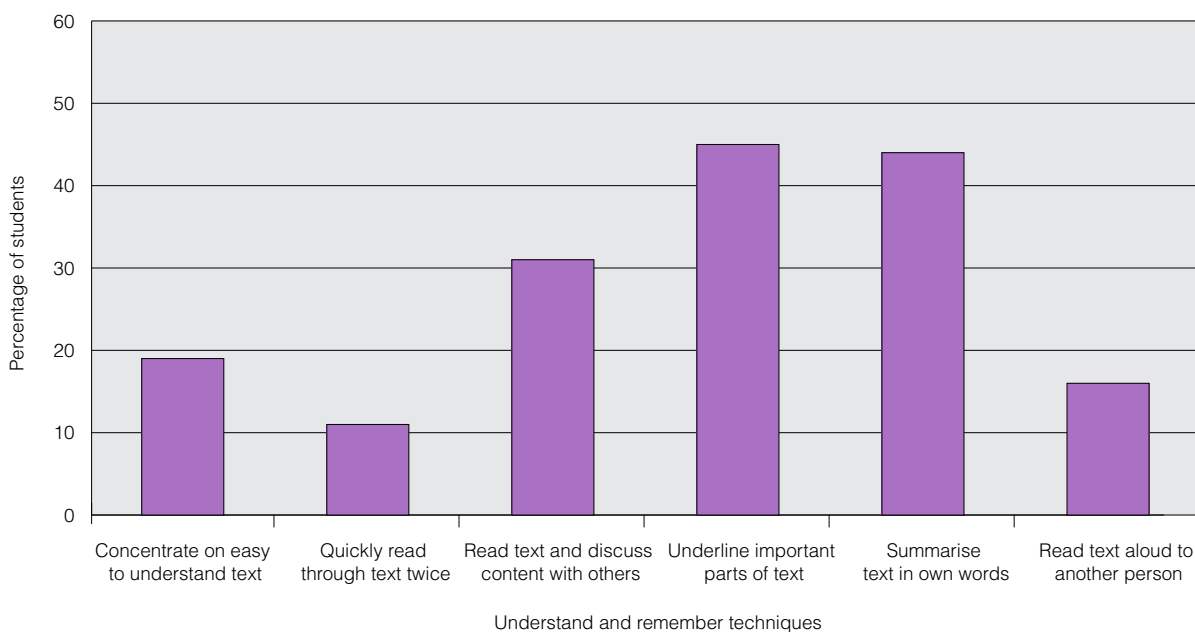

Figure 4.6 Percentage of students finding understanding and remembering techniques useful

The differences in scores between those in the lowest quartile on this index and those in the highest quartile, as with the scores on the Control Strategies index, is substantial – around 100 score points, or the equivalent of about three years of schooling.

Strategies to summarise information

To investigate student awareness of strategies that would be of most use when summarising texts during study, PISA 2009 presented them with the following scenario:

You have just read a long and rather difficult two-page text about fluctuations in the water level of a lake in Africa. You have to write a summary. How do you rate the usefulness of the following strategies for writing a summary of this two-page text?

◗ *I write a summary. Then I check that each paragraph is covered in the summary, because the content of each paragraph should be included*

◗ *I try to copy out accurately as many sentences as possible*

◗ *Before writing the summary, I read the text as many times as possible*

◗ *I carefully check whether the most important facts in the text are represented in the summary*

◗ *I read through the text, underlining the most important sentences. Then I write them in my own words as a summary*

As with all the indices related to learning strategies, Australian females scored higher on average on this index than did Australian males, with females scoring significantly higher than the OECD average and males significantly lower than the OECD average.

Figure 4.7 shows the percentage of students in Australia finding the summarising strategies useful. The difference in average reading achievement for those students in the lowest quartile on the Summarising index, and those in the highest quartile, was around 120 score points, almost four years of schooling. In general, Australian students were more likely to endorse higher order strategies such as "Read text, underlining most important sentences then summarise these" and "Check that most important facts covered in summary" than lower order strategies such as "Copy as many sentences as possible" or "Read the text as many times as possible".
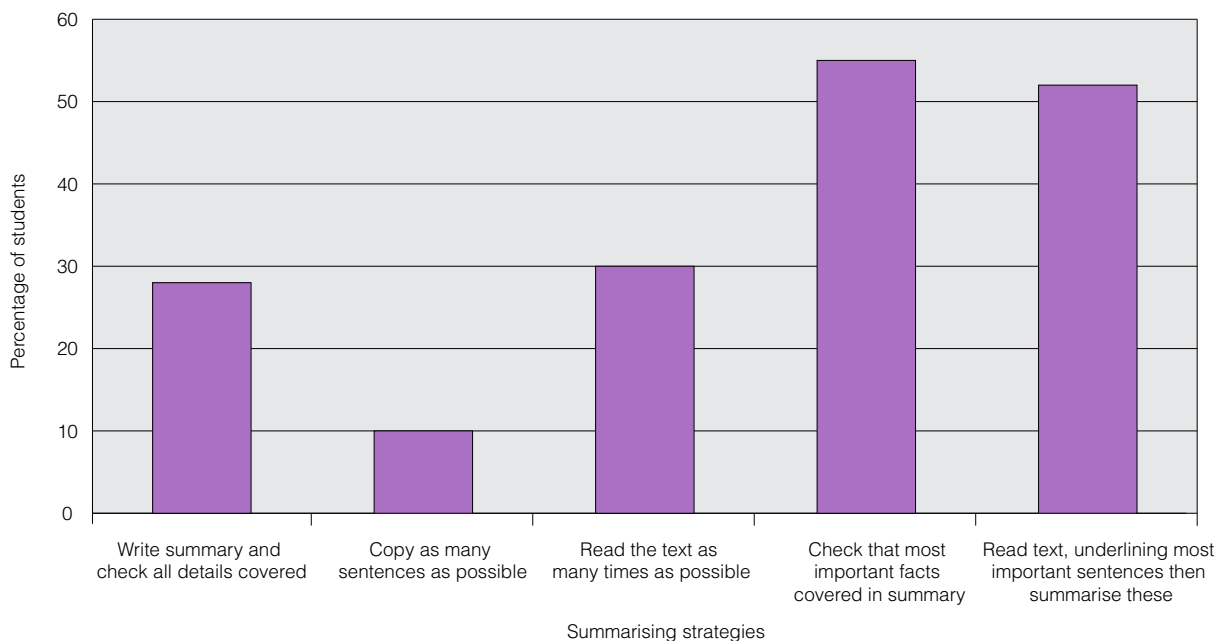

Figure 4.7 Percentage of students finding summarising strategies useful

Final Words

While Australian students continue to perform at a high level comparative to the rest of the world, there are some indications that this may have changed. Data from PISA 2009, which allows direct comparisons with PISA 2000, show that Australia is one of the few countries in the OECD whose reading literacy scores have declined significantly. Australia's participation in international studies allows these comparisons to be made, and the national data allow patterns to be seen that are often not obvious at a local level.

Of particular concern is the decline in performance of our high achieving students. In PISA 2000 the proportion of students achieving proficiency levels 5 or 6 was 18 per cent – in PISA 2009 this had declined to 13 per cent. This decline was seen with both male and female students. Related directly to this is the proportion of low achievers (students achieving below proficiency level 2). In PISA 2000, 12 per cent of Australia's students were achieving at the level deemed by the OECD to put them at risk of not having acquired the skills necessary for being a productive and active 21st century citizen. In PISA 2009 this had increased slightly to 14 per cent of students. Are we teaching too much to the middle? Are we not extending the capable students enough, and are we addressing the needs of low achieving students?

Broadly, the proportions of students at the lower levels of achievement are strongly linked to socioeconomic background and to Indigenous background. Almost 40 per cent of our Indigenous students (compared to 13 per cent of non-Indigenous students) and twenty-four per cent of students from the lowest quartile of socioeconomic background (compared to 5 per cent from the highest quartile) are not achieving the basic level of reading literacy (i.e. not achieving proficiency level 2). Are there particular strategies that can be used to scaffold the performance of these groups of students?

The surveys of students provide some valuable information that may assist in improving outcomes for all students.

◗ The data from PISA and other studies show that students who enjoy reading do it more, and become better at it. How do we engage students more with reading so that they <u>want</u> to do it?

◗ Students need to be exposed to a broad range of texts, but also need to be encouraged to engage with both fiction and non-fiction pieces on a regular basis.

◗ Gender differences need to be addressed. A much smaller proportion of male students than female students achieve at the higher proficiency levels (10% vs 16%) and a much larger proportion achieve at the lower proficiency levels (20% vs 9%). Clearly there is a great deal of work to be done in lifting achievement levels of male students. However there is evidence that if males read to the same extent as females, such gender differences are negated. At the same time as attention needs to be paid to addressing the underperformance of males, the females at the lower ends of achievement also need to be recognised. Lower achieving students need to be engaged with a much wider variety of texts.

◗ To further students' understanding and engagement with texts, focus on extended discussion in the classroom of the meanings of text, critically analysing the author's conclusions and offering alternatives.

◗ Teachers can support students' comprehension of the texts they encounter, both literature and non-literature, by providing direct and explicit instruction about strategies for reading comprehension.

Appendix

1

Reading literacy proficiency subscale descriptions

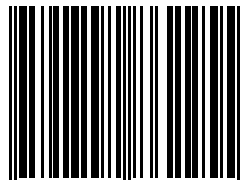| Proficiency level	Aspect		
	Access and retrieve	**Integrate and interpret**	**Reflect and evaluate**
	Characteristic of tasks		
6	Combine multiple pieces of independent information, from different parts of a mixed text, in an accurate and precise sequence, working in an unfamiliar context.	Make multiple inferences, comparisons and contrasts that are both detailed and precise. Demonstrate a full and detailed understanding of the whole text or specific sections. May involve integrating information from more than one text. Deal with unfamiliar abstract ideas, in the presence of prominent competing information. Generate abstract categories for interpretations.	Hypothesise about or critically evaluate a complex text on an unfamiliar topic, taking into account multiple criteria or perspectives, and applying sophisticated understandings from beyond the text. Generate categories for evaluating text features in terms of appropriateness for an audience.
5	Locate, and possibly combine, multiple pieces of deeply embedded information, some of which may be outside the main body of the text. Deal with strongly distracting, competing information.	Demonstrate a full and detailed understanding of a text. Construe the meaning of nuanced language. Apply criteria to examples scattered throughout a text, using high level inference. Generate categories to describe relationships between parts of a text. Deal with ideas that are contrary to expectations.	Hypothesise about a text, drawing on specialised knowledge, and on deep understanding of long or complex texts that contain ideas contrary to expectations. Critically analyse and evaluate potential or real inconsistencies, either within the text or between the text and ideas outside the text.
4	Locate several pieces of embedded information, each of which may need to meet multiple criteria, in a text with unfamiliar context or form. Possibly combine verbal and graphical information. Deal with extensive and/or prominent competing information.	Use text-based inferences to understand and apply categories in an unfamiliar context, and to construe the meaning of a section of text by taking into account the text as a whole. Deal with ambiguities and ideas that are negatively worded.	Use formal or public knowledge to hypothesise about or critically evaluate a text. Show accurate understanding of long or complex texts.
3	Locate several pieces of information, each of which may need to meet multiple criteria. Combine pieces of information within a text. Deal with competing information.	Integrate several parts of a text in order to identify the main idea, understand a relationship or construe the meaning of a word or phrase. Compare, contrast or categorise, taking many criteria into account. Deal with competing information.	Make connections or comparisons, give explanations, or evaluate a feature of a text. Demonstrate a detailed understanding of the text in relation to familiar, everyday knowledge, or draw on less common knowledge.
2	Locate one or more pieces of information, each of which may need to meet multiple criteria. Deal with some competing information.	Identify the main idea in a text, understand relationships, form or apply simple categories, or construe meaning within a limited part of the text when the information is not prominent and low level inferences are required.	Make a comparison or connections between the text and outside knowledge, or explain a feature of the text by drawing on personal experience or attitudes.
1a	Locate one or more independent pieces of explicitly stated information meeting a single criterion, by making a literal or synonymous match. The target information may not be prominent in the text but there is little or no competing information.	Recognise the main theme or author's purpose in a text about a familiar topic, when the required information in the text is prominent.	Make a simple connection between information in the text and common, everyday knowledge.
1b	Locate a single piece of explicitly stated information in a prominent position in a simple text, by making a literal or synonymous match, where there is no competing information. May make simple connections between adjacent pieces of information.	Either recognise a simple idea that is reinforced several times in the text (possibly with picture cues), or interpret a phrase, in a short text on a familiar topic.	There are no questions at this level in the existing reading question pool.

Figure A1.1 Summary descriptions of the seven proficiency levels on the reading subscales for aspect

Proficiency level	Text format	
	Continuous texts	**Non-continuous texts**
	Characteristic of tasks	
6	Negotiate single or multiple texts that may be long, dense or deal with highly abstract and implicit meanings. Relate information in texts to multiple, complex or counterintuitive ideas.	Identify and combine information from different parts of a complex document that has unfamiliar content, sometimes drawing on features that are external to the display, such as footnotes, labels and other organisers. Demonstrate a full understanding of the text structure and its implications.
5	Negotiate texts whose discourse structure is not obvious or clearly marked, in order to discern the relationship of specific parts of the text to the implicit theme or intention.	Identify patterns among many pieces of information presented in a display that may be long and detailed, sometimes by referring to information that is in an unexpected place in the text or outside the text.
4	Follow linguistic or thematic links over several paragraphs, often in the absence of clear discourse markers, in order to locate, interpret or evaluate embedded information.	Scan a long, detailed text in order to find relevant information, often with little or no assistance from organisers such as labels or special formatting, to locate several pieces of information to be compared or combined.
3	Use conventions of text organisation, where present, and follow implicit or explicit logical links such as cause and effect relationships across sentences or paragraphs in order to locate, interpret or evaluate information.	Consider one display in the light of a second, separate document or display, possibly in a different format, or draw conclusions by combining several pieces of graphical, verbal and numeric information.
2	Follow logical and linguistic connections within a paragraph in order to locate or interpret information; or synthesise information across texts or parts of a text in order to infer the author's purpose.	Demonstrate a grasp of the underlying structure of a visual display such as a simple tree diagram or table, or combine two pieces of information from a graph or table.
1a	Use redundancy, paragraph headings or common print conventions to identify the main idea of the text, or to locate information stated explicitly within a short section of text.	Focus on discrete pieces of information, usually within a single display such as a simple map, a line graph or bar graph that presents only a small amount of information in a straightforward way, and in which most of the verbal text is limited to a small number of words or phrases.
1b	Recognise information in short, syntactically simple texts that have a familiar context and text type, and include ideas that are reinforced by pictures or by repeated verbal cues.	Identify information in a short text with a simple list structure and a familiar format.

Figure A1.2 Summary descriptions of the seven proficiency levels on the reading subscales for text format