PISA 2015

DRAFT READING LITERACY FRAMEWORK

MARCH 2013

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INTRODUCTION

1. In PISA 2015, reading literacy will be assessed as a minor domain, providing an opportunity to make comparisons in student performance over time since previous cycles. This framework continues the description and illustration of the PISA assessment as set out in the 2009 Framework, when reading was re-examined and updated for use as the major domain in that cycle. The framework will not, however, cover Digital Reading (also referred to as Electronic Reading). This is because the 2009 report provided separate scales for print reading and digital reading. Reading being a minor domain in PISA 2015, the inclusion of a 'new' element, i.e., digital reading is out of scope, moreover it would not serve the measurement of trend as digital reading was not assessed in all participating countries in 2009 or 2012, and it was not scaled as part of the overall concept of reading literacy.

2. For PISA 2015, computer-based assessment will be the primary mode of delivery for all domains, including Reading literacy. However, paper-based assessment instruments will be provided for countries choosing not to test their students by computer. The Reading Literacy component for both the computer-based and paper-based instruments will comprise the same intact clusters of reading trend items. The number of trend items in both minor domains will be increased, thereby increasing the construct coverage whilst reducing the number of students responding to each question. This design is intended to reduce potential bias whilst stabilising and improving the measurement of trend.

3. With the move to computer-based delivery for 2015, the 2009 text classification 'medium: print and electronic' is a potential source of confusion. For 2015 the terminology has been updated to 'fixed-text' and 'dynamic-text' to distinguish between delivery mode and the space in which the text is displayed (hereafter referred to as 'text display space'), regardless of whether it is printed or onscreen. It is important to note, however, that the constructs of the 2009 Framework remain unchanged.

Reading Literacy 2015 Terminology

Mode: this refers only to the delivery channel. The following distinctions are made:

Paper-based: items delivered on paper

Computer-based: items delivered on computer

Medium: In 2009 a broad classification was made between features of print and electronic texts. For 2015, the classification is kept but renamed as '**text display space':**

Fixed-text: is the term for what was previously called 'print medium text'. As this type of text is now presented on screen for PISA 2015 the term 'print' no longer covers the phenomenon.

Dynamic-text: is the term for what was previously called 'electronic medium text'. As 'print-medium' texts are now also presented on screen, the term 'electronic' would now apply to both text display spaces, therefore it has been updated.

Digital Reading: The terms 'digital reading assessment' and 'electronic reading' are retained for historical purposes to refer specifically to the 2009/2012 optional domain.

Note: This new terminology is intended as provisional and for use only in 2015 when items previously delivered on paper and classified as 'print' will be delivered onscreen. The purpose is to make a clearer distinction between the mode of delivery and the features of the classification previously known as 'medium'. In 2018, when Reading Literacy will once again become the major domain, both the framework and these terms will be revisited and updated.

4. In 2015, only fixed-text items will be used in the assessment, and these will be delivered primarily in a computer-based mode. This is shown in Table 1 below.

Table 1. Relationship between mode and text display space for 2015

Mode / Text display space	Fixed text (*print-medium*)	Dynamic text (*electronic medium*)
Paper-based mode	✓	×
Computer-based mode	✓	✓ (but not assessed in 2015)

5. The features of fixed and dynamic text types are described in more detail later in the 2015 Reading Framework.

Continuity and change in the reading literacy framework

6. Reading literacy was the major domain assessed in 2000 for the first PISA cycle (PISA 2000). For the fourth PISA cycle (PISA 2009), it was the first to be revisited as a major domain, requiring a full review of its framework and new development of the instruments that represent it. A major element in the revision for 2009 was the introduction of electronic reading, referring to reading of dynamic text specifically developed for presentation on computer screen.

7. The original reading literacy framework for PISA was developed for the PISA 2000 cycle (from 1998 to 2001) through a consensus building process involving reading experts selected by the participating countries to form the PISA 2000 reading advisory group (REG). The definition of reading literacy evolved in part from the IEA Reading Literacy Study (1992) and the International Adult Literacy Survey (IALS, 1994, 1997 and 1998). In particular, it reflected IALS' emphasis on the importance of reading skills for active participation in society. It was also influenced by contemporary – and still current – theories of reading, which emphasise reading's interactive nature (Britt, Goldman, & Rouet, 2012; Dechant, 1991; Rayner & Reichle, 2010; Rumelhart, 1985), models of discourse comprehension (Kintsch, 1998; Zwaan & Singer, M, 2003), and theories of performance in solving reading tasks (Kirsch, 2001; Kirsch & Mosenthal, 1990; Rouet, J.-F, 2006).

8. Much of the substance of the PISA 2000 framework was retained in the PISA 2009 framework, respecting one of the central purposes of PISA: to collect and report trend information about performance in reading, mathematics and science. However, the PISA domain frameworks also aim to be evolving documents that will adapt to and integrate new developments in theory and practice over time. There is therefore a significant amount of evolution, reflecting both an expansion in our understanding of the nature of reading and changes in the world.

9. There were two major modifications in the 2009 version of the reading framework. It incorporated the reading of electronic texts and elaborated the constructs of reading engagement and metacognition.

10. The PISA 2000 reading literacy framework briefly mentioned electronic texts, stating, "It is expected that electronic texts will be used in future survey cycles but will not be included in this cycle because of time and access issues" (OECD, 1999). The PISA 2009 framework recognised the increasing prevalence of digital texts in many parts of our lives: personal, social and economic. The new demands on reading proficiency created by the digital world led to the framework's inclusion of electronic reading, an inclusion that resulted in some redefinition both of texts and of the mental processes that readers use to approach texts. The 2009 edition of the framework thereby acknowledged the fact that any definition of reading in the 21st century needs to encompass both static and dynamic texts.

11. PISA 2009 was the first large-scale international study to assess electronic reading. As such, this initiative, while grounded in current theory and best practices from around the world, was inevitably a first step. This reality is reflected in the fact that not all participating countries elected to take part in the administration of the electronic reading assessment (ERA), which was therefore implemented as an international option in 2009 and 2012.

12. Changes in our concept of reading since 2000 have already led to an expanded definition of reading literacy, which recognises motivational and behavioural characteristics of reading alongside cognitive characteristics. Both reading engagement and metacognition – an awareness and understanding of how one develops an understanding of text and uses reading strategies – were referred to briefly at the end of the first PISA framework for reading under "Other issues" (OECD, 1999). Reading engagement and metacognition featured more prominently in the PISA 2009 reading framework as elements that can make an important contribution to policy makers' understanding of factors that can be developed, shaped and fostered as components of reading literacy.

The structure of the reading literacy framework

13. The first chapter addresses what is meant by the term "reading literacy" in PISA, and how it will be measured in PISA 2015. This section introduces the importance of reading literacy in today's societies. The second section defines reading literacy and elaborates on various phrases that are used in the reading framework, along with the assumptions underlying the use of these words. The third section focuses on the organisation of the domain of the assessment of reading literacy, and discusses the characteristics that will be represented in the tasks included in the PISA 2015 assessment. The fourth section discusses some of the operational aspects of the assessment and presents sample items. Finally, the last section describes how the reading literacy data will be summarised and outlines plans for reporting.

Reading literacy as a foundational skill

14. We live in a rapidly changing world, where both the quantity and type of written materials are increasing and where more and more people are expected to use these materials in new and sometimes more complex ways. It is now generally accepted that our understanding of "reading literacy" evolves along with changes in society and culture. The reading literacy skills needed for individual growth, economic participation and citizenship 20 years ago were different from those of today; and it is likely that in 20 years' time they will change further still.

15. The goal of education has shifted its emphasis from the collection and memorisation of information only, to the inclusion of a broader concept of knowledge: "The meaning of knowing has shifted from being able to remember information, to being able to find and use it" (Simon, 1996). The ability to access, understand and reflect on all kinds of information is essential if individuals are to be able to participate fully in our knowledge-based society. The PISA framework for assessing the reading literacy of students towards the end of compulsory education, therefore, must focus on reading literacy skills that include finding, selecting, interpreting and evaluating information from the full range of texts associated with situations that reach beyond the classroom.

16. According to Holloway (1999), reading skills are essential to the academic achievement of middle- and high school students. Olson (1977a; 1977b) claims that in today's society, reading literacy introduces a bias because it provides advantages to those who acquire the necessary skills. As the currency used in schools, literacy provides access to literate institutions and has an impact on cognition, or thinking processes (Kern and Friedman, 2008; Olson, 1994; Pretorius, 2000); it also shapes the way in which we think.

17. Achievement in reading literacy is not only a foundation for achievement in other subject areas within the educational system, but also a prerequisite for successful participation in most areas of adult life (Cunningham & Stanovich, 1998; Smith, Mikulecky, Kibby, & Dreher, 2000).

18. Today, the need for higher levels of education and skills is large and growing. Those with below average skills find it increasingly difficult to earn above average wages in global economies where the restructuring of jobs favours those who have acquired higher levels of education and skills. They have little hope of fully participating in increasingly complex societies where individuals are required to take on additional responsibility for different aspects of their lives: from planning their careers, to nurturing and guiding their children, to navigating healthcare systems, to assuming more responsibility for their financial future. The non-economic returns from literacy in the form of enhanced personal well-being and greater social cohesion are as important as the economic and labour-market returns, according to some authorities (Friedman, 2005; OECD, 2001). Elwert (2001) has advanced the concept of "societal literacy", referring to the way in which literacy is fundamental in dealing with the institutions of a modern bureaucratic society. Law, commerce and science use written documents and written procedures such as laws, contracts and publications that one has to be able to understand in order to function in these domains. The European Commission (2001) summed up the foundational nature of reading literacy skills as "key to all areas of education and beyond, facilitating participation in the wider context of lifelong learning and contributing to individuals' social integration and personal development." The European Union endorsed this statement with its enshrinement of communication in the mother tongue, comprising listening, speaking, reading and writing, as the first of eight key competencies "which all individuals need for personal fulfilment and development, active citizenship, social inclusion and employment" (Education Council, 2006).

19. Reading literacy skills matter not just for individuals, but for economies as a whole. Policy makers and others are coming to recognise that in modern societies, human capital – the sum of what the individuals in an economy know and can do – may be the most important form of capital. Economists have for many years developed models showing generally that a country's education levels are a predictor of its economic growth potential. Although the strength of this link is limited by the fact that an educational credential means something different from one country to another, international surveys such as the International Adult Literacy Survey (IALS) or the OECD Programme for the International Assessment of Adult Competencies (PIAAC) now let us measure adults' literacy skills directly and not just through their credentials. These surveys, in turn, allow us to make more credible inferences about the connection between human capital and national economic growth. In one such study, several Canadian economists analysed links between literacy levels and economic performance over a long period. They found that the average literacy level of a nation's population is a better predictor of economic growth than educational achievement (Coulombe, Trembly, & Marchand, 2004).

The importance of dynamic texts

20. Proficiency in reading literacy is a key not only to unlocking the world of printed text, but also dynamic texts, which are becoming an increasingly important part of students' and adults' reading. As of 2007, almost 1.5 billion people – one-fifth of the world's population – were reading online (International Telecommunications Union, 2009). The rate of growth in online use has been staggering, and continues to grow faster every year – though the rate varies widely according to location (The World Bank, 2007). The variation is not only geographical, but also social and economic. In all countries, Internet use is closely linked with socioeconomic status and education (Sweets & Meates, 2004). Yet the requirement to use computers is not confined to particular social and economic strata. The Adult Literacy and Life Skills Survey (OECD and STATCAN, 2005) looked at computer use by type of occupation in seven countries or regions. While "expert" knowledge workers such as scientists and computing professionals use computers most intensively in the workplace, office workers and customer service clerks are also likely to need to use

computers on the job. Therefore workers in a wide range of occupations are increasingly required to use computers as part of their jobs.

21. Beyond the workplace, computer technology has a growing importance in personal, social and civic life. To stay informed and involved, accessing information via networked computer technologies, including mobile devices such as tablets,smart-phones, and electronic displays for reading books, is becoming the norm. As individuals take on more responsibility for health, retirement and finance decisions, these technologies become increasingly important sources of information. Those with access to the Internet and with the skills and knowledge to use it effectively are more likely to become empowered patients who can make informed healthcare choices; active citizens who use e-mail to influence government officials' policy decisions or mobilise like-minded voters; and members of virtual communities who, via online support groups, use instant messaging and discussion boards to interact with others across social classes, racial groups and generations (Pew Internet & American Life Project, 2005).

22. While many of the skills required for reading fixed- and dynamic-texts are similar, electronic reading demands that new emphases and strategies be added to the repertoires of readers. Gathering information on the Internet requires skimming and scanning through large amounts of material and immediately evaluating its credibility. Critical thinking, therefore, has become more important than ever in reading literacy (Halpern, 1989; Shetzer & Warschauer, 2000; Warschauer, 1999). Warschauer concludes that overcoming the "digital divide" is not only a matter of achieving online access, but also of enhancing people's abilities to integrate, evaluate and communicate information.

Motivational and behavioural elements of reading literacy

23. Reading-related skills, attitudes, interests, habits and behaviours have been shown in a number of recent studies to be strongly linked with reading proficiency. For example, in PISA 2000 there was a greater correlation between reading proficiency and reading engagement (comprising attitudes, interests and practices) than between reading proficiency and socio-economic status (OECD, 2002). In other studies reading engagement has been shown to account for more variance in reading achievement than any other variable besides previous achievement (Guthrie & Wigfield, 2000).

24. Like reading engagement, metacognition has long been considered to be related to reading achievement (Brown, Brown, *et al*. 1983; Flavell & Wellman, 1977; Schneider, 1989, 1999; Schneider & Pressley, 1997), but most studies of metacognition have been largely experimental and focused on young readers. The PISA 2000 reading framework alluded to the potential for using PISA to collect information about metacognition relevant to policy makers, but concluded that in the absence of an existing instrument suitable for use in a large-scale study, metacognition could not be part of the reading literacy study in 2000 (OECD, 1999). Since then, such instrumentation has been developed (Artelt, Schiefele, & Schneider, 2001; Schlagmüller & Schneider, 2006) which made the inclusion of a survey of metacognition in reading within PISA 2009 feasible.

25. Headlines from the PISA 2009 background questionnaire results included:

- In all countries, students who enjoy reading the most perform significantly better than students who enjoy reading the least.
- On average across OECD countries, 37% of students – and 45% or more in Austria, the Netherlands, and Luxembourg – report that they do not read for enjoyment at all.
- In all countries, boys are not only less likely than girls to say that they read for enjoyment, they also have different reading habits when they do read for pleasure.

- High-performing countries are also those whose students generally know how to summarise information.

- While factors such as predisposition, temperament, peer pressure and socialisation may contribute to boys having less interest in reading than girls, boys could be encouraged to enjoy reading more and to read more for enjoyment.

- The gender gap in reading engagement has widened, as well as the gender gap in reading performance

26. For PISA 2015 the background survey will focus on Science as the major domain. The findings from the 2009 survey will be used to inform the development of the 2018 Reading Literacy framework.

DEFINING READING LITERACY

27. Definitions of reading and reading literacy have changed over time in parallel with changes in society, economy, and culture. The concept of learning, and particularly the concept of lifelong learning, have expanded the perception of reading literacy. Literacy is no longer considered an ability acquired only in childhood during the early years of schooling. Instead it is viewed as an expanding set of knowledge, skills and strategies that individuals build on throughout life in various contexts, through interaction with their peers and the wider community.

28. Cognitively-based theories of reading literacy emphasise the interactive nature of reading and the constructive nature of comprehension, in the print medium (Binkley & Linnakylä, 1997; Bruner, 1990; Dole, Duffy, Roehler, & Pearson, 1991) and to an even greater extent in the electronic medium (Fastrez, 2001; Legros & Crinon, 2002; Leu, 2007; Reinking, 1994). The reader generates meaning in response to text by using previous knowledge and a range of text and situational cues that are often socially and culturally derived. While constructing meaning, the reader uses various processes, skills, and strategies to foster, monitor, and maintain understanding. These processes and strategies are expected to vary with context and purpose as readers interact with multiple continuous and non-continuous texts both in print and (increasingly) when using digital technologies (Britt & Rouet, 2012).

29. The PISA 2000 definition of reading literacy was as follows:

> Reading literacy is understanding, using and reflecting on written texts, in order to achieve one's goals, to develop one's knowledge and potential, and to participate in society.

30. The PISA 2009 definition of reading, continued for 2012 and 2015, adds engagement in reading as an integral part of reading literacy:

> Reading literacy is 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.

31. Each part of the definition is considered in turn below, taking into account the original elaboration and some important developments in the defining of the domain which use evidence from PISA and other empirical studies, from theoretical advances and from the changing nature of the world.

Reading literacy . . .

32. The term "reading literacy" is preferred to "reading" because it is likely to convey to a non-expert audience more precisely what the survey is measuring. "Reading" is often understood as simply decoding, or even reading aloud, whereas the intention of this survey is to measure something broader and deeper. Reading literacy includes a wide range of cognitive competencies, from basic decoding, to knowledge of words, grammar and larger linguistic and textual structures and features, to knowledge about the world. It also includes metacognitive competencies: the awareness of and ability to use a variety of appropriate

strategies when processing texts. Metacognitive competencies are activated when readers think about, monitor and adjust their reading activity for a particular goal.

33. Historically, the term “literacy” referred to a tool used to acquire and communicate writtten and printed information. This seems close to the notion that the term “reading literacy” is intended to express in this study: the active, purposeful and functional application of reading in a range of situations and for various purposes. PISA assesses a wide range of students. Some of these students will go on to a university, possibly to pursue an academic career; some will pursue further studies in preparation for joining the labour force; and some will enter the workforce directly upon completion of school education. Regardless of their academic or labour-force aspirations, reading literacy will be important to their active participation in their community and economic and personal life.

. . is understanding, using, reflecting on . . .

34. The word "understanding" is readily connected with "reading comprehension", a well-accepted element of reading. The word “using” refers to the notions of application and function – doing something with what we read. “Reflecting on” is added to “understanding” and “using” to emphasise the notion that reading is interactive: readers draw on their own thoughts and experiences when engaging with a text. Of course, every act of reading requires some reflection, drawing on information from outside the text. Even at the earliest stages, readers draw on symbolic knowledge to decode a text and require a knowledge of vocabulary to make meaning. As readers develop their stores of information, experience and beliefs, they constantly, often unconsciously, test what they read against outside knowledge, thereby continually reviewing and revising their sense of the text. At the same time, incrementally and perhaps imperceptibly, readers’ reflections on texts may alter their sense of the world. Reflection might also require readers to consider the content of the text, apply their previous knowledge or understanding, or think about the structure or form of the text.

. . . and engaging with . . .

35. A reading literate person not only has the skills and knowledge to read well, but also values and uses reading for a variety of purposes. It is therefore a goal of education to cultivate not only proficiency but also engagement in reading. Engagement in this context implies the motivation to read and is comprised of a cluster of affective and behavioural characteristics that include an interest in and enjoyment of reading, a sense of control over what one reads, involvement in the social dimension of reading, and diverse and frequent reading practices.

. . . written texts . . .

36. The phrase “written texts” is meant to include all those coherent texts in which language is used in its graphic form: hand-written, printed and on screen. These texts do not include aural language artefacts such as voice recordings; nor do they include film, TV, animated visuals, or pictures without words. They do include visual displays such as diagrams, pictures, maps, tables, graphs and comic strips, which include some written language (for example, captions). These visual texts can exist either independently or they can be embedded in larger texts. “Hand-written texts” are mentioned for completeness: although they are clearly part of the universe of written texts, they are not very different from fixed texts (in either paper- or computer-based modes) in structure or in terms of the processes and reading strategies they require. Dynamic texts, on the other hand, are distinguishable in a number of respects, including physical readability; the amount of text visible to the reader at any one time; the way different parts of a text and different texts are connected with one another through hypertext links; and consequent upon all these text characteristics, the way that readers typically engage with dynamic texts. To a much greater extent than

with printed or hand-written texts readers need to construct their own pathways to complete any reading activity associated with an electronic text.

37. Instead of the word “information”, which is used in some other definitions of reading, the term “texts” was chosen because of its association with written language and because it more readily connotes literary as well as information-focused reading.

. . . in order to achieve one’s goals, to develop one’s knowledge and potential, and to participate in society.

38. This phrase is meant to capture the full scope of situations in which reading literacy plays a role, from private to public, from school to work, from formal education to lifelong learning and active citizenship. "To achieve" one’s goals and to develop one’s knowledge and potential” spells out the idea that reading literacy enables the fulfilment of individual aspirations – both defined ones such as graduating or getting a job, and those less defined and less immediate which enrich and extend personal life and lifelong education. 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: “participating” includes social, cultural, and political engagement. Literate people, for example, find it easier to navigate complex institutions such as health systems, government offices and legal agencies; and they can participate more fully in a democratic society by making informed decisions when they vote. Participation may also include a critical stance, a step for personal liberation, emancipation, and empowerment (Linnakylä, 1992; Lundberg, 1991, 1997; MacCarthey & Raphael, 1989).

39. More than fifty years ago in his seminal work *Maturity in Reading* Gray wrote of the “interests, attitudes and skills that enable young people and adults to meet effectively the reading demands of their current lives” (Gray & Rogers, 1956). The PISA concept of reading literacy is consistent with Gray’s broad and deep notion of maturity in reading, while simultaneously embracing the new challenges of reading in the 21st century. It conceives reading as the foundation for full participation in the economic, political, communal and cultural life of contemporary society.

ORGANISING THE DOMAIN

40. The previous section defined the domain of reading literacy and laid out the set of assumptions that were made in constructing this definition. This section describes how the domain is represented, a vital issue because the organisation and representation of the domain determines the test design and, ultimately, the evidence about student proficiencies that can be collected and reported.

41. Reading is a multidimensional domain. While many elements are part of the construct, not all can be taken into account and manipulated in an assessment such as PISA. In designing an assessment it is necessary to select the elements considered most important to manipulate in building the assessment.

42. For PISA, the two most important considerations are firstly, to *ensure broad coverage* of what students read and for what purposes they read, both in and outside of school; and secondly, to organise the domain to *represent a range of difficulty*. The PISA reading literacy assessment is built on three major task characteristics: *situation* – the range of broad contexts or purposes for which reading takes place; *text* – the range of material that is read; and *aspect* – the cognitive approach that determines how readers engage with a text. All three contribute to ensuring *broad coverage* of the domain. In PISA, features of the text and aspect variables (but not of the situation variable) are also manipulated to influence the *difficulty* of a task.

43. In order to use these three main task characteristics in designing the assessment, they must be operationalised. That is, the various values that each of these characteristics can take on must be specified. This allows test developers to categorise the materials they are working with and the tasks they construct so that they can then be used to organise the reporting of the data and to interpret results.

44. Reading is a complex activity; the components of reading therefore do not exist independently of one another in neat compartments. The assignment of texts and tasks to framework categories does not imply that the categories are strictly partitioned or that the materials exist in atomised cells determined by a theoretical structure. The framework scheme is provided to ensure coverage, to guide the development of the assessment and to set parameters for reporting, based on what are considered the marked features of each task.

Situation

45. A useful operationalisation of the situation variables is found in the Common European Framework of Reference (CEFR) developed for the Council of Europe (Council of Europe, 1996). Although this framework was originally intended to describe second- and foreign- language learning, in this respect at least it is relevant to first language assessment as well. The CEFR situation categories are: reading for private use; reading for public use; reading for work and reading for education. They have been adapted for PISA to personal, public, occupational and educational contexts, and are described in the paragraphs below.

46. The *personal* category relates to texts that are intended to satisfy an individual's personal interests, both practical and intellectual. This category also includes texts that are intended to maintain or develop personal connections with other people. It includes personal letters, fiction, biography, and

informational texts that are intended to be read to satisfy curiosity, as a part of leisure or recreational activities. In the electronic medium it includes personal e-mails, instant messages, social media/networking sites and diary-style blogs.

47. The *public* category describes the reading of texts that relate to activities and concerns of the larger society. The category includes official documents as well as information about public events. In general, the texts associated with this category assume a more or less anonymous contact with others; they also therefore include forum-style blogs, news websites and public notices that are encountered both online and in print.

48. The content of *educational* texts is usually designed specifically for the purpose of instruction. Printed text books and interactive learning software are typical examples of material generated for this kind of reading. Educational reading normally involves acquiring information as part of a larger learning task. The materials are often not chosen by the reader, but instead assigned by an instructor. The model tasks are those usually identified as "reading to learn" (Sticht, 1975; Stiggins, 1982).

49. Many 15-year-olds will move from school into the labour force within one to two years. A typical *occupational* reading task is one that involves the accomplishment of some immediate task. It might include searching for a job, either in a print newspaper's classified advertisement section, or on line; or following workplace directions. The model tasks of this type are often referred to as "reading to do" (Sticht, 1975; Stiggins, 1982). Texts written for these purposes, and the tasks based on them, are classified as occupational in PISA. While only some of the 15-year-olds who are assessed will currently have to read at work, it is important to include tasks based on texts that are related to work since the assessment of young people's readiness for life beyond compulsory schooling and their ability to use their knowledge and skills to meet real-life challenges is a fundamental goal of PISA.

50. *Situation* is used in PISA reading literacy to define texts and their associated tasks, and refers to *the contexts and uses for which the author constructed the text*. The manner in which the situation variable is specified is therefore about supposed audience and purpose, and is not simply based on the place where the reading activity is carried out. Many texts used in classrooms are not specifically designed for classroom use. For example, a piece of literary text may typically be read by a 15-year-old in a mother-tongue language or literature class, yet the text was written (presumably) for readers' personal enjoyment and appreciation. Given its original purpose, such a text is classified as *personal* in PISA. As Hubbard (1989) has shown, some kinds of reading usually associated with out-of-school settings for children, such as rules for clubs and records of games, often take place unofficially at school as well. These texts are classified as *public* in PISA. Conversely, textbooks are read both in schools and in homes, and the process and purpose probably differ little from one setting to another. Such texts are classified as *educational* in PISA.

51. It should be noted that the four categories overlap. In practice, for example, a text may be intended both to delight and to instruct (personal and educational); or to provide professional advice which is also general information (occupational and public). While content is not a variable that is specifically manipulated in this study, by sampling texts across a variety of situations the intent is to maximise the diversity of content that will be included in the PISA reading literacy survey.

52. One obvious way to distribute the reading literacy tasks in the assessment would be to do so evenly across the four situations. In the PISA 2000 framework however the occupational situation is given less weight for two reasons. First, it was considered important to reduce the potential dependence on specific occupational knowledge that can result when selecting occupational texts. Second, it was expected that the same type of questions and directives could be constructed from texts classified in one of the other situations, where 15-year-old students might have better access to the content. These considerations remain

relevant. The distribution of tasks by situation for PISA 2009 print reading was therefore very similar to that for 2000 and will continue to be similar for 2015 in order to maintain trend. Table 1 shows the approximate distribution of tasks by situation for reading tasks in 2015. It should be noted that the percentages given here and in all other tables in this section are approximate only, as distribution of tasks according to framework variables is not final at the time of publication.

Table 2. Target distribution of tasks by situation for PISA 2015

Situation	% of total tasks
Personal	*30*
Educational	*25*
Occupational	*15*
Public	*30*
TOTAL	**100**

Text

53. Reading requires material for the reader to read. In an assessment, that material – a text (or a set of texts) related to a particular task – must be coherent within itself. That is, the text must be able to stand alone without requiring additional material to make sense to the proficient reader. While it is obvious that there are many different kinds of texts and that any assessment should include a broad range, it is not so obvious that there is an ideal categorisation of kinds of texts. The addition of electronic reading in the 2009 framework made this issue still more complex. For PISA 2009 there were four main classifications:

1. Medium: print and electronic
2. Environment: authored and message-based
3. Text format: continuous, non-continuous, mixed and multiple
4. Text type: description, narration, exposition, argumentation, instruction and transaction

54. The classification of medium – print and electronic – was applied to each text as the broadest distinction. For 2015 the reading literacy assessment will make use of print only, albeit presented on computer. For clarity, these are now referred to as fixed and dynamic texts under the heading text display space. However, dynamic texts will not be part of the PISA 2015 assessment since reading is a minor domain, and the previous Digital Reading Assessment was an optional component which cannot be used to measure trends for all countries.

55. Text format and text type categories applied to all texts in PISA 2009 irrespective of whether they were print or electronic and will therefore be maintained in PISA 2015. The environment classification, on the other hand, was determined to be only applicable to electronic-medium (dynamic) texts and will therefore not play a role in PISA 2015. Each of these characteristics is discussed below.

56. In addition to the four major text characteristics – text display space (formerly medium), environment, text format and text type – some additional terms are used in the following sections to describe characteristics of both fixed and dynamic texts.

57. *Text object* is a term used to describe the familiar names given to texts when we refer to them in everyday contexts: terms such as report, novel, play, timetable, home page or e-mail message. Text objects vary according to both text display space and format. For example, timetables occur as non-continuous texts in both fixed and dynamic texts; home pages occur only in dynamic texts; reports may appear in either display space and in a variety of text formats.

58. *Text features* are characteristics of the text-based information that students have to work with in a task. Text features include the number of texts or pages students need to read in order to respond to individual items, the length of the texts to be read, the linguistic complexity of the texts, and the assumed familiarity the students have with the topics presented.

59. *Navigation tools and features* help readers to negotiate their way into, around and across texts. Navigation tools and features were discussed in the PISA 2009 framework in the context of electronic-medium (dynamic) texts. They included navigation icons, scroll bars, tabs, menus, embedded hyperlinks, text search functions such as Find or Search, and global content representation devices such as site maps. Many navigation tools and features are intrinsic and unique to dynamic texts, and make up some of its defining characteristics. However like many of the other dynamic elements, navigation tools and features have parallels in fixed texts. In fixed texts they include tables of contents, indexes, chapter and section headings, headers and footers, page numbers and footnotes. When moving the fixed-text 'print' reading trend items from paper to computer-based delivery in the 2015 assessment, care needs to be taken to use navigation tools typical of dynamic texts sparingly and only the most obvious among them. Effects of presenting the original paper-based items on the computer will be investigated during the mode-effect study in the Field Test.

Text display space

60. In the Reading framework for PISA 2009, the categorisation of the texts into the medium of 'print texts' and 'electronic texts' was aligned with the delivery mode of the assessment, respectively, paper-based and computer-based. Print texts were delivered on paper and electronic texts were delivered on computer. As computer is the mode of delivery in 2015, this alignment will be breached as all 'print' units will be delivered on screen, but will still retain the main features of texts that were labeled 'print-medium texts'. However, with the advent of new electronic devices (such as e-readers, tablets and smartphones) for presenting texts that would have been presented only on paper in the past, the presentation of fixed 'print' texts on screen in an assessment situation is no longer a violation of authenticity. In other words: both 'print-medium' and 'electronic-medium' texts can be consumed onscreen.

61. For PISA 2015, the term 'text display space' is used instead of 'medium' to describe the features of the space - fixed or dynamic - and not the mode in which the text is presented.

62. *Fixed texts* usually appear on paper in forms such as single sheets, brochures, magazines and books but tend to appear more and more onscreen in PDFs and e-readers. This development results in further blurring the distinction between what was labelled 'print reading' and 'electronic reading' in the PISA 2009 framework. As PISA 2015 will only operationalise what was labelled 'print reading' in 2009 there will be no conceptual change on this aspect for PISA 2015. The physical status of the printed text encourages (though it may not compel) the reader to approach the content of the text in a particular sequence. In essence, such texts have a fixed or static existence. Moreover, in real life and in the assessment context, the extent or amount of the text is immediately visible to the reader.

63. *Dynamic texts* only appear onscreen. Dynamic text is synonymous with *hypertext*: a text or texts with navigation tools and features that make possible and indeed even require non-sequential reading. Each reader constructs a "customised" text from the information encountered at the links he or she follows. In essence, such texts have an unfixed, dynamic existence. In dynamic texts, typically only a fraction of the available text can be seen at any one time, and often the extent of text available is unknown.

Figure 1 Fixed reading texts in PISA 2009-2015 (paper- and computer-based)

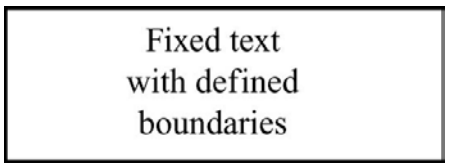
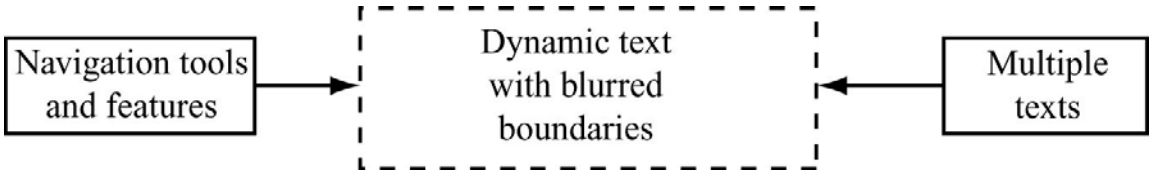


Figure 2 Dynamic reading texts in PISA 2009-2012 (computer-based)



64. The difference between fixed and dynamic texts in the PISA assessment context, is illustrated in Figure 1 and Figure 2.

65. For a complete description of reading literacy it is necessary to make the distinction between the reading of texts presented as fixed with defined boundaries (whether presented on paper or on screen) – and the reading of texts presented as dynamic text with undefined boundaries (always on screen). However, as dynamic texts will not be included in PISA 2015, we will only sparingly refer to them in the remainder of this document.

Environment

66. The *environment* classification was a new variable for the PISA 2009 reading framework. In PISA it applies only to dynamic texts and will therefore not be discussed in the 2015 PISA framework.

Text format

67. An important classification of texts, and one at the heart of the organisation of the PISA 2000 framework and assessment, is the distinction between continuous and non-continuous texts. Continuous texts are typically composed of sentences that are, in turn, organised into paragraphs. These may fit into even larger structures such as sections, chapters, and books. Non-continuous texts are most frequently organised in matrix format, based on combinations of lists.

68. Texts in continuous and non-continuous format appear in both fixed and dynamic texts. Mixed and multiple format texts are also prevalent in both, particularly so in dynamic texts. Each of these four formats is elaborated below.

69. Other non-text formatted objects are also commonly used in conjunction with fixed and particularly with dynamic texts. Pictures and graphic images occur frequently in fixed texts and can legitimately be regarded as integral to such texts. Static images as well as videos, animations and audio files regularly accompany dynamic texts and can, also, be regarded as integral to those texts. As a reading literacy assessment, PISA does not focus on non-text formatted objects independently, but any such objects may, in principle, appear in PISA as part of a (verbal) text. However in practice the use of video and animation is very limited in the current assessment. Audio is not used at all because of practical limitations such as the need for headphones and audio translation.

Continuous texts

70. Continuous texts are formed by sentences organised into paragraphs. Examples of text objects in continuous text format include newspaper reports, essays, novels, short stories, reviews and letters, including on kindle and other e-book readers.

71. Graphically or visually, organisation occurs by the separation of parts of the text into paragraphs, by paragraph indentation, and by the breakdown of text into a hierarchy signalled by headings that help readers to recognise the organisation of the text. These markers also provide clues to text boundaries (showing section completion, for example). The location of information is often facilitated by the use of different font sizes, font types such as italic and boldface, or borders and patterns. The use of format clues is an essential subskill of effective reading.

72. Discourse markers also provide organisational information. Sequence markers (first, second, third, etc.), for example, signal the relation of each of the units introduced to each other and indicate how the units relate to the larger surrounding text. Causal connectors (therefore, for this reason, since, etc.) signify cause-effect relationships between parts of a text.

Non-continuous texts

73. Non-continuous texts, also known as documents, are organised differently to continuous texts, and therefore require a different kind of reading approach. As the sentence is the smallest unit of continuous text, so all non-continuous texts can be shown to be composed of a number of lists (Kirsch & Mosenthal, 1990). Some are single, simple lists, but most consist of several simple lists combined. This analysis of non-continuous texts does not refer to their use or employ the common labels often attached to them, but does identify key structural features that are common to a number of different texts. Readers who understand the structure of texts are better able to identify the relationships between the elements and understand which texts are similar and which are different.

74. Examples of non-continuous text objects are lists, tables, graphs, diagrams, advertisements, schedules, catalogues, indexes and forms. These text objects occur in both fixed and dynamic texts.

75. The following two text format categories were new in the 2009 framework. Recognition of the importance of integrating information in different formats and across several texts, as part of the reader's repertoire, has led to the identification of *mixed* and *multiple* texts as distinct text formats.

Mixed texts

76. Many fixed and dynamic texts are single, coherent objects consisting of a set of elements in both a continuous and non-continuous format. In well-constructed mixed texts the components (for example, a prose explanation including a graph or table) are mutually supportive through coherence and cohesion links at the local and global level.

77. Mixed text is a common format in magazines, reference books and reports, where authors employ a variety of presentations to communicate information. In dynamic texts authored web pages are typically mixed texts, with combinations of lists, paragraphs of prose and often graphics. Message-based texts such as online forms, e-mail messages and forums also combine texts that are continuous and non-continuous in format.

Multiple texts

78. For the purposes of the PISA reading framework multiple texts are defined as those which have been generated independently, and make sense independently; they are juxtaposed for a particular occasion or may be loosely linked together for the purposes of the assessment. The relationship between the texts may not be obvious; they may be complementary or may contradict one another. For example, a set of websites from different companies providing travel advice may or may not provide similar directions to tourists. Multiple texts may have a single "pure" format (for example, continuous), or may include both continuous and non-continuous texts.

79. Tasks in the 2015 assessment continue to be classified for the most part as either continuous or non-continuous, with about two-thirds of such tasks addressing continuous texts and one-third non-continuous texts. Although some mixed and multiple texts were used in the PISA 2000 assessment, they were not separately classified, but rather described in terms of their continuous or non-continuous elements. In the PISA 2009 assessment there was a deliberate effort to include stimuli of mixed and multiple print texts, and to include tasks that require the reader to integrate information across differently formatted parts within a mixed text or across multiple texts. In previous administrations of PISA the few tasks that required integration within mixed texts or across multiple texts were classified according to text format on the basis of what was judged to be the part of the stimulus (continuous or non-continuous) that was the object of the more significant processing. The introduction of four categories of text format allows the still relatively small number of print-based tasks that require integration of information across formats or across texts to be classified respectively as *mixed* or *multiple*.

Table 3. Target distribution of tasks by text format for PISA 2015

Text format	% of total tasks print
Continuous	*60*
Non-continuous	*30*
Mixed	*5*
Multiple	*5*
TOTAL	**100**

Text type

80. A different categorisation of text is by text type: description, narration, exposition, argumentation, instruction and transaction. In previous versions of the reading framework, these text types were located as subcategories of the continuous text format. In the PISA 2009 cycle it was acknowledged that non-continuous texts (and the elements of mixed and multiple texts) also have a descriptive, narrative, expository, argumentative or instructional purpose.

81. Texts as they are found in the world typically resist categorisation, as they are usually not written with text type rules in mind, and tend to cut across categories. For example, a chapter in a textbook might include some definitions (exposition), some directions on how to solve particular problems (instruction), a brief historical account of the discovery of the solution (narration), and descriptions of some typical objects involved in the solution (description). Nevertheless, in an assessment like PISA it is useful to categorise texts according to the text type, based on the predominant characteristics of the text, in order to ensure that the instrument samples across a range of texts that represent different types of reading.

82. The following classification of texts used in PISA is adapted from the work of Werlich (1976).

83. *Description* is the type of text where the information refers to properties of objects in space. The typical questions that descriptive texts provide an answer to are *what* questions. Descriptions can take several forms. Impressionistic descriptions present information from the point of view of subjective impressions of relations, qualities, and directions in space. Technical descriptions present information from the point of view of objective observation in space. Frequently, technical descriptions use non-continuous text formats such as diagrams and illustrations. Examples of text objects in the text type category description are a depiction of a particular place in a travelogue or diary, a catalogue, a geographical map, an online flight schedule or a description of a feature, function or process in a technical manual.

84. *Narration* is the type of text where the information refers to properties of objects in time. Narration typically answers questions relating to *when*, or *in what sequence*. Why characters in stories behave as they do is another important question that narration typically answers. Narration can take different forms. N*arratives* present change from the point of view of subjective selection and emphasis, recording actions and events from the point of view of subjective impressions in time. *Reports* present change from the point of view of an objective situational frame, recording actions and events which can be verified by others. *News stories* intend to enable the readers to form their own independent opinion of facts and events without being influenced by the reporter's references to his own views. Examples of text objects in the text type category *narration* are a novel, a short story, a play, a biography, a comic strip, and a newspaper report of an event.

85. *Exposition* is the type of text in which the information is presented as composite concepts or mental constructs, or those elements into which concepts or mental constructs can be analysed. The text provides an explanation of how the different elements interrelate in a meaningful whole and often answers questions about *how*. Expositions can take various forms. *Expository essays* provide a simple explanation of concepts, mental constructs, or conceptions from a subjective point of view. *Definitions* explain how terms or names are interrelated with mental concepts. In showing these interrelations, the definition explains the meaning of words. *Explications* are a form of analytic exposition used to explain how a mental concept can be linked with words or terms. The concept is treated as a composite whole which can be understood by being broken down into constituent elements and their interrelations with each being given a name. *Summaries* are a form of synthetic exposition used to explain and communicate texts in a shorter form than the original text requires. *Minutes* are a record of the results of meetings or presentations. *Text interpretations* are a form of both analytic and synthetic exposition used to explain the abstract concepts which are realised in a particular (fictional or non-fictional) text or group of texts. Examples of text objects in the text type category *exposition* are a scholarly essay, a diagram showing a model of memory, a graph of population trends, a concept map and an entry in an online encyclopaedia.

86. *Argumentation* is the type of text that presents the relationship among concepts or propositions. Argument texts often answer *why* questions. An important subclassification of argument texts is persuasive and opinionative texts, referring to opinions and points of view. *Comment* relates the concepts of events, objects, and ideas to a private system of thoughts, values, and beliefs. *Scientific argumentation* relates concepts of events, objects, and ideas to systems of thought and knowledge so that the resulting propositions can be verified as valid or non-valid. Examples of text objects in the text type category *argumentation* are a letter to the editor, a poster advertisement, the posts in an online forum and a web-based review of a book or film.

87. *Instruction* (sometimes called injunction) is the type of text that provides directions on what to do. *Instructions* present directions for certain behaviours in order to complete a task. *Rules, regulations*, and *statutes* specify requirements for certain behaviours based on impersonal authority, such as practical validity or public authority. Examples of text objects in the text type category *instruction* are a recipe, a series of diagrams showing a procedure for giving first aid, and guidelines for operating digital software.

88. *Transaction* represents the kind of text that aims to achieve a specific purpose outlined in the text, such as requesting that something is done, organising a meeting or making a social engagement with a friend. Before the spread of electronic communication, this kind of text was a significant component of some kinds of letters and, as an oral exchange, the principal purpose of many phone calls. This text type was not included in Werlich's (1976) categorisation, used until now for the PISA framework.

89. The term transactional is used in PISA not to describe the general process of extracting meaning from texts (as in reader-response theory), but the type of text written for the kinds of purposes described here. Transactional texts are often personal in nature, rather than public, and this may help to explain why they do not appear to be represented in some of the corpora used to develop many text typologies. For example, this kind of text is not commonly found on websites, which are frequently the subject of corpus linguistics studies (for example, Santini, 2006). With the extreme ease of personal communication using e-mail, text messages, blogs and social networking websites, this kind of text has become much more significant as a reading text type in recent years. Transactional texts often build on common and possibly private understandings between communicators – though clearly, this feature is difficult to explore in a large-scale assessment. Examples of text objects in the text type transaction are everyday e-mail and text message exchanges between colleagues or friends that request and confirm arrangements.

90. *Narration* occupies a prominent position in many national and international assessments. Some texts are presented as being accounts of the world as it is (or was) and therefore claim to be factual or non-fictional. Fictional accounts bear a more metaphorical relation to the world as it is, appearing either as accounts of how it might be or of how it seems to be. In other large-scale reading studies, particularly those for school students: the National Assessment of Educational Progress (NAEP); the IEA Reading Literacy Study (IEARLS); and the IEA Programme in International Reading Literacy Study (PIRLS), the major classification of texts is between fictional or literary texts, and non-fictional texts (*Reading for literary experience* and *Reading for information or to perform a task* in NAEP; *Literary experience* and *Acquire and use information* in PIRLS). This distinction is increasingly blurred as authors use formats and structures typical of factual texts in creating their fictions. The PISA reading literacy assessment includes both factual and fictional texts, and texts that may not be clearly one or the other. PISA however does not attempt to measure differences in reading proficiency between one type and the other. In PISA, fictional texts are classified as narration. The proportion of narrative texts in the print medium since PISA 2009 has been similar to that in PISA 2000 and will also be maintained in 2015, at about 15%. Narratives in the electronic medium tend to be non-verbal, with animation and film having filled the position. There is therefore no specification for narrative in the electronic reading assessment.

Aspect

91. *Aspects* are the *mental* strategies, approaches or purposes that readers use to negotiate their way into, around and between texts.

92. Five aspects guided the development of the reading literacy assessment tasks:

- retrieving information
- forming a broad understanding
- developing an interpretation
- reflecting on and evaluating the content of a text
- reflecting on and evaluating the form of a text

93. As it was not possible to include sufficient items in the 2000 or 2009 PISA assessments to report on each of the five aspects as a separate subscale, for reporting on reading literacy these five aspects were organised into three broad aspect categories:

- access and retrieve
- integrate and interpret
- reflect and evaluate

94. However, for PISA 2012 and 2015, reading is a minor domain, which in PISA traditionally precludes reporting on subscales.

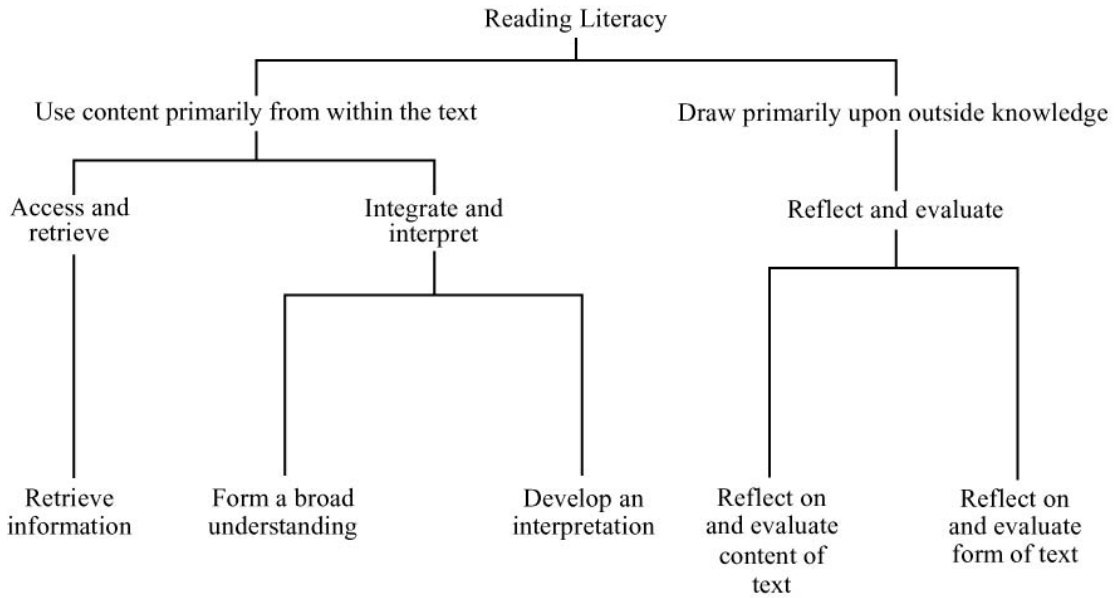
95. *Retrieving information* tasks, which focus the reader on separate pieces of information within the text, are assigned to the *access and retrieve* scale.

96. *Forming a broad understanding* and *developing an interpretation* tasks focus the reader on relationships within a text. Tasks that focus on the whole text require readers to form a broad understanding; tasks that focus on relationships between parts of the text require developing an interpretation. The two are grouped together under *integrate and interpret*.

97. Tasks addressing the last two aspects, *reflecting on the content of a text* and *reflecting on the form of a text*, are grouped together into a single *reflect and evaluate* aspect category. Both require the reader to draw primarily on knowledge outside the text and relate it to what is being read. *Reflecting on content* tasks are concerned with the notional substance of a text; *reflecting on form* tasks are concerned with its structure or formal features.

98. Figure 3 shows the relationship between the five aspects targeted in the test development and the three broad reporting aspects.

Figure 3 Relationship between the reading framework and the aspect subscales



99. An elaboration of the three broad aspect categories is given below.

Access and retrieve

100. *Accessing and retrieving* involves going to the information space provided and navigating in that space to locate and retrieve one or more distinct pieces of information. Access and retrieve tasks can range from locating the details required by an employer from a job advertisement, to finding a telephone number with several prefix codes, to finding a particular fact to support or disprove a claim someone has made.

101. In daily life, readers often need to retrieve information. To do so, readers must scan, search for, locate and select relevant information from some information space (for example, a page of continuous text, a table or a list of information). The required information is most frequently found in a single location, though in some cases the information may be in two or more sentences, in several cells of a table or in different parts of a list.

102. In assessment tasks that call for retrieving information, students must match information given in the question with either identically worded or synonymous information in the text and use this to find the new information called for. In these tasks, *retrieving information* is based on the text itself and on explicit information included in it. Retrieving tasks require the student to find information based on requirements or features explicitly specified in questions. The student has to detect or identify one or more essential elements of a question, such as characters, place/time and setting, and then to search for a match that may be literal or synonymous.

103. Retrieving tasks can involve various degrees of ambiguity. For example, the student may be required to select explicit information, such as an indication of time or place in a text or table. A more difficult version of this same type of task might involve finding synonymous information. This sometimes involves categorisation skills, or it may require discriminating between two similar pieces of information. Different levels of proficiency can be measured by systematically varying the elements that contribute to the difficulty of the task.

104. While *retrieving* describes the process of selecting the required information, *accessing* describes the process of getting to the place, the information space, where the required information is located. Some items may require retrieving information only, especially in fixed-texts where the information is immediately visible and where the reader only has to select what is appropriate in a clearly specified information space. On the other hand, some items in the dynamic space require little more than accessing: for example, clicking on an embedded link to open a web page (in a very limited information space), or clicking to select an item in a list of search results. However, only the former processes are involved in the *access and retrieve* tasks in PISA 2015 as the Digital Reading Assessment is not offered as an international option. Such *access and retrieve* items in the fixed-text display space might require readers to use navigation features such as headings or captions to find their way to the appropriate section of the text before locating the relevant information. The process of accessing and retrieving information involves skills associated with selecting, collecting and retrieving information.

Integrate and interpret

105. Integrating and interpreting involves processing what is read to make internal sense of a text.

106. *Integrating* focuses on demonstrating an understanding of the coherence of the text. It can range from recognising local coherence between a couple of adjacent sentences, to understanding the relationship between several paragraphs, to recognising connections across multiple texts. In each case, integrating involves connecting various pieces of information to make meaning, whether it be identifying similarities and differences, making comparisons of degree, or understanding cause and effect relationships.

107. In the fixed-text display space, information might be located in a single paragraph, across different paragraphs or sections of text, or across two or more texts. In the dynamic-text display space, integration can be more complex.

108. *Interpreting* refers to the process of making meaning from something that is not stated. It may involve recognising a relationship that is not explicit or it may be required at a more local level to infer (to deduce from evidence and reasoning) the connotation of a phrase or a sentence. When interpreting, a reader is identifying the underlying assumptions or implications of part or all of the text. A wide variety of cognitive activities is included in this approach. For example, a task may involve inferring the connection between one part of the text and another, processing the text to form a summary of the main ideas, requiring an inference about the distinction between principal and subordinate elements, or finding a specific instance in the text of something earlier described in general terms.

109. Both interpreting and integrating are required to *form a broad understanding.* A reader must consider the text as a whole or in a broad perspective. Students may demonstrate initial understanding by identifying the main topic or message or by identifying the general purpose or use of the text. Examples include tasks that require the reader to select or create a title or assumption for the text, explain the order of simple instructions, or identify the main dimensions of a graph or a table. Others include tasks that require the student to describe the main character or setting of a story, to identify a theme of a literary text, or explain the purpose or use of a map or figure.

110. Within this aspect some tasks might require the student to identify a specific piece of text, when a theme or main idea is explicitly stated. Other tasks may require the student to focus on more than one part of the text – for instance, if the reader has to deduce the theme from the repetition of a particular category of information. Selecting the main idea implies establishing a hierarchy among ideas and choosing the one that is most general and overarching. Such a task indicates whether the student can distinguish between key ideas and minor details, or can recognise the main theme in a sentence or title.

111. Both interpreting and integrating are also involved in *developing an interpretation*, which requires readers to extend their initial broad impressions so that they develop a deeper, more specific or more complete understanding of what they have read. Many tasks in this category call for logical understanding: readers must process the organisation of information in the text. To do so, readers must demonstrate their understanding of cohesion even if they cannot explicitly state what cohesion is. In some instances, developing an interpretation may require the reader to process a sequence of just two sentences relying on local cohesion. This might even be facilitated by the presence of cohesive markers, such as the use of “first” and “second” to indicate a sequence. In more difficult instances (for example, to indicate relations of cause and effect), there might not be any explicit markings.

112. Other tasks include comparing and contrasting information, and identifying and listing supporting evidence. *Compare and contrast* tasks require the student to draw together two or more pieces of information from the text. In order to process either explicit or implicit information from one or more sources in such tasks, the reader must often infer an intended relationship or category.

113. As well as these integrative tasks, *developing an interpretation* tasks may involve drawing an inference from a more localised context: for example, interpreting the meaning of a word or phrase that gives a particular nuance to the text. This process of comprehension is also assessed in tasks that require the student to make inferences about the author’s intention, and to identify the evidence used to infer that intention.

114. As mentioned above, *interpreting* signifies the process of making meaning from something that is not explicitly stated. In recognising or identifying a relationship that is not explicit, an act of interpretation

is required: thus interpretation is perhaps always involved somewhere in the process of *integration* as described above. The relationship between the processes of integration and interpretation may therefore be seen as intimate and interactive. Integrating involves first inferring a relationship within the text (a kind of interpretation), and then bringing pieces of information together, therefore allowing an interpretation to be made that forms a new integrated whole.

Reflect and evaluate

115. *Reflecting and evaluating* involves drawing upon knowledge, ideas or attitudes beyond the text in order to relate the information provided within the text to one's own conceptual and experiential frames of reference.

116. *Reflect* items may be thought of as those that require readers to consult their own experience or knowledge to compare, contrast or hypothesise. *Evaluate* items are those that ask readers to make a judgment drawing on standards beyond the text.

117. *Reflecting on and evaluating the content of a text* requires the reader to connect information in a text to knowledge from outside sources. Readers must also assess the claims made in the text against their own knowledge of the world. Often readers are asked to articulate and defend their own points of view. To do so, readers must be able to develop an understanding of what is said and intended in a text. They must then test that mental representation against what they know and believe on the basis of either prior information, or information found in other texts. Readers must call on supporting evidence from within the text and contrast it with other sources of information, using both general and specific knowledge as well as the ability to reason abstractly.

118. Assessment tasks representing this category of processing include providing evidence or arguments from outside the text, assessing the relevance of particular pieces of information or evidence, or drawing comparisons with moral or aesthetic rules (standards). The task might require a student to offer or identify alternative pieces of information to strengthen an author's argument, or evaluate the sufficiency of the evidence or information provided in the text.

119. The outside knowledge to which textual information is to be connected may come from the student's own knowledge or from ideas explicitly provided in the question. In the PISA context, any outside knowledge required is intended to be within the expected range of 15-year-olds' experiences. For example, it is assumed that 15-year-olds are likely to be familiar with the experience of going to the movies, a context that is drawn upon in the items related to the stimulus *Macondo*, discussed below.

120. *Reflecting on and evaluating the form of a text* requires readers to stand apart from the text, to consider it objectively and to evaluate its quality and appropriateness. Implicit knowledge of text structure, the style typical of different kinds of texts and register play an important role in these tasks. These features, which form the basis of an author's craft, figure strongly in understanding standards inherent in tasks of this nature. Evaluating how successful an author is in portraying some characteristic or persuading a reader depends not only on substantive knowledge but also on the ability to detect subtleties in language – for example, understanding when the choice of an adjective might influence interpretation.

121. Some examples of assessment tasks characteristic of reflecting on and evaluating the form of a text include determining the usefulness of a particular text for a specified purpose and evaluating an author's use of particular textual features in accomplishing a particular goal. The student may also be called upon to describe or comment on the author's use of style and to identify the author's purpose and attitude.

122. To some extent every critical judgment requires the reader to consult his or her own experience; some kinds of reflection, on the other hand, do not require evaluation (for example, comparing personal experience with something described in a text). Thus evaluation might be seen as a subset of reflection.

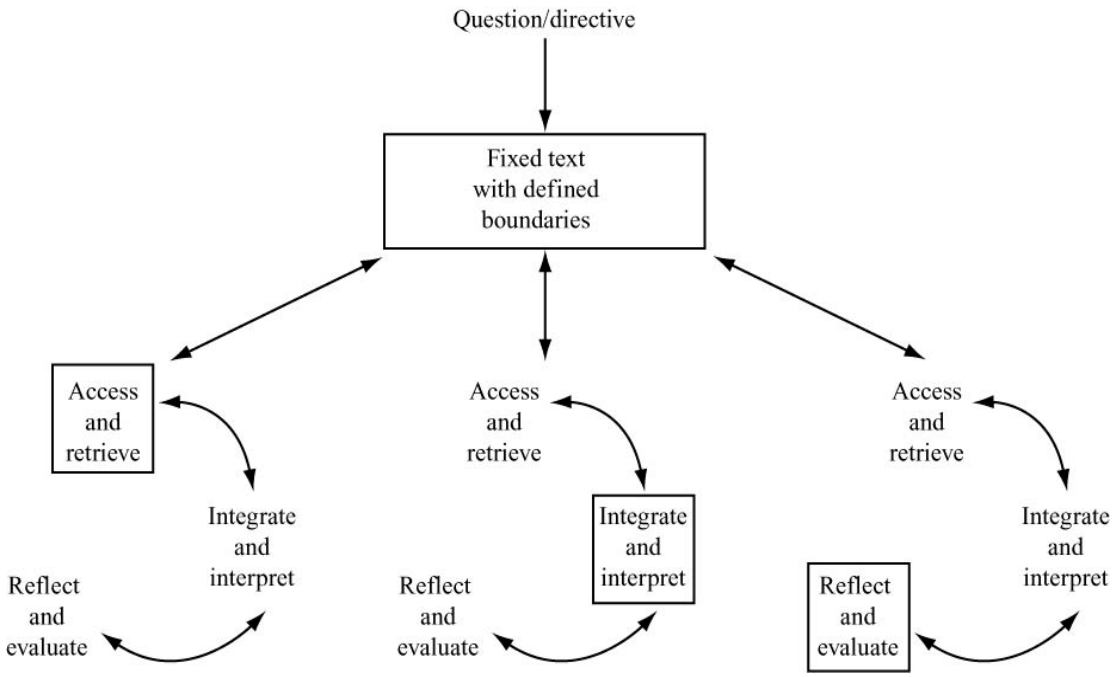
The aspects of reading

123. The three broad aspects defined for PISA reading literacy are not conceived of as entirely separate and independent, but rather as interrelated and interdependent. Indeed from a cognitive processing perspective they can be considered semi-hierarchical: it is not possible to interpret or integrate information without having first retrieved it, and it is not possible to reflect on or evaluate information without having made some sort of interpretation. In PISA, however, the focus is on developing an *assessment* framework that will guide the construction of an assessment to operationalise and subsequently measure proficiency in different aspects of the reading domain. The framework description of reading aspects distinguishes approaches to reading that are demanded for different contexts and purposes; these are then reflected in assessment tasks that emphasise one or other aspect. All readers, irrespective of their overall proficiency, are expected to be able to demonstrate some level of competency in each of the reading aspects (Langer, 1995), since all are seen as being in the repertoire of each reader at every developmental level.

124. Given that the aspects are rarely if ever entirely separable, the assignment of a task to an aspect is often a matter of fine discrimination that involves judgements about the salient (most important) features of the task, and about the predicted typical approach to it. Figure 1.4 represents the way the aspects are operationalised in different tasks, in PISA 2015. The boxes around aspect names represent the emphasis of the task, while the presence of the other aspects at each task point acknowledge that all the aspects (as cognitive processes) are likely to play some role in each task.

125. For the most part, identifying the aspect for each PISA reading literacy task – the task being the question or directive that the student sees – will depend on the objective of the task. For example, retrieving a single piece of explicitly stated information in a non-continuous text (such as finding out the number of Internet users worldwide) may involve a complex series of steps requiring the evaluation of the relevance of several entries in a table, comparing and contrasting column and row headings and deciding which of several entries is likely to be required information. Nevertheless, if the ultimate task, finding the number of Internet users worldwide, is stated explicitly in the table, this task is classified as *access and retrieve*. This is the approach that has been taken in PISA print reading to classify each task by aspect.

Figure 4 Relationship between task, text and aspects in the fixed-text display space (paper and computer-based mode)



126. In order to maintain trend and represent the balance of the aspects applicable in the assessment environment, the distribution by aspect across the assessment remains similar to that of PISA 2009. The target distribution of tasks by aspect is shown in Table 4.

Table 4. Approximate distribution of tasks by aspect for PISA 2015

Aspect	% of total tasks print
Access and retrieve	25
Integrate and interpret	50
Reflect and evaluate	25
Total	100

ASSESSING READING LITERACY

127. The previous section outlined the conceptual framework for reading literacy. The concepts in the framework must in turn be represented in tasks and questions in order to collect evidence of students' proficiency in reading literacy.

Building tasks

128. The distribution of tasks across the major framework variables of situation, text and aspect was discussed in the previous section. In this section some of the other major issues in constructing and operationalising the assessment are considered: factors affecting item difficulty, and how difficulty can be manipulated; the choice of response formats; and some issues around coding and scoring. Considerations of moving the fixed-text 'print-medium' trend items to a computer-based delivery mode in 2015 are also discussed here.

Factors affecting item difficulty

129. The purpose of the PISA reading literacy assessment is to monitor and report on the reading proficiency of 15-year-olds as they approach the end of compulsory education. Each task in the assessment is designed to gather a specific piece of evidence about that proficiency by simulating a reading activity that a reader might carry out either inside or outside school, as an adolescent or as an adult.

130. The PISA reading literacy tasks range from very straightforward comprehension activities to quite sophisticated activities requiring deep and multiple levels of understanding. The difficulty of any reading literacy task depends on an interaction amongst several variables. Drawing on Kirsch and Mosenthal's work (see for example Kirsch, 2001; Kirsch & Mosenthal, 1990), we can manipulate the difficulty of items by applying knowledge of the following aspect and text format variables.

131. In *access and retrieve* tasks, difficulty is conditioned by the number of pieces of information that the reader needs to locate, by the amount of inferencing required, by the amount and prominence of competing information, and by the length and complexity of the text.

132. In *integrate and interpret* tasks, difficulty is affected by the type of interpretation required (for example, making a comparison is easier than finding a contrast); by the number of pieces of information to be considered; by the degree and prominence of competing information in the text; and by the nature of the text: the less familiar and the more abstract the content and the longer and more complex the text, the more difficult the task is likely to be.

133. In *reflect and evaluate* tasks, difficulty is affected by the type of reflection or evaluation required (from least to most difficult, the types of reflection are: connecting; explaining and comparing; hypothesising and evaluating); by the nature of the knowledge that the reader needs to bring to the text (a task is more difficult if the reader needs to draw on narrow, specialised knowledge rather than broad and common knowledge); by the relative abstraction and length of the text; and by the depth of understanding of the text required to complete the task.

134. In tasks relating to *continuous texts*, difficulty is influenced by the length of the text; the explicitness and transparency of its structure; how clearly the parts are related to the general theme; and whether there are text features such as paragraphs or headings, and discourse markers such as sequencing words.

135. In tasks relating to *non-continuous texts*, difficulty is influenced by the amount of information in the text; the list structure (simple lists are easier to negotiate than more complex lists); whether the components are ordered and explicitly organised, for example with labels or special formatting; and whether the information required is in the body of the text or in a separate part, such as a footnote.

Response formats

136. The form in which the evidence is collected – the *response format* – varies according to what is considered appropriate given the kind of evidence that is being collected, and also according to the pragmatic constraints of a large-scale assessment. As in any large-scale assessments the range of feasible item formats is limited, with multiple-choice and short constructed-response items (where students write their own answer) being the most manageable formats.

137. Several studies based on PISA data suggest that response format has a significant effect on the performance of different groups: for example, students at different levels of proficiency (Routitsky & Turner, 2003); students in different countries (Grisay & Monseur, 2007); and boys and girls (Lafontaine & Monseur, 2006). Given this variation, Lafontaine and Monseur caution that in measuring trends over time, it is important to maintain a similar proportion of tasks in multiple choice and constructed response formats from one administration to the next. A further significant consideration in the context of reading literacy is that open constructed response items are particularly important for the reflection and evaluation aspect, where the intent is often to assess the quality of thinking rather than the conclusion itself. Finally, students in different countries are more or less familiar with various response formats. Including items in a variety of formats is likely to provide some balance between more and less familiar formats for all students, regardless of nationality.

138. In summary, to ensure proper coverage of the ability ranges in different countries, to ensure fairness given the inter-country and gender differences observed, and to ensure a valid assessment of the reflect and evaluate aspect, both multiple choice and open constructed response items continue to be used in PISA reading literacy assessments regardless of the change in delivery mode. Any major change in the distribution of item types in print reading might also impact on the measurement of trends.

139. Table 5 shows target coding requirements for PISA reading tasks. The distribution is shown in relation to the three aspects of reading literacy assessment. Items that require expert judgement consist of open constructed and short constructed responses. Items that do not require coder judgement consist of multiple choice, complex multiple choice and closed constructed response items. The closed constructed response items are those that require the student to generate a response, but require minimal judgment on the part of a coder. For example, a task in which a student is asked to copy a single word from the text, where only one word is acceptable, would be classified as a closed constructed response item. Such items impose a minor cost burden in operational terms and therefore from a pragmatic perspective, these closed constructed response items can be grouped with multiple choice items.

Table 5. Approximate distribution of tasks by coding requirement for PISA 2015

Aspect	% of tasks requiring expert judgment in coding	% of tasks not requiring expert judgment in coding	% of test
Access and retrieve	11	14	25
Integrate and interpret	14	26	50
Reflect and evaluate	18	7	25
TOTAL	***43***	***57***	**100**

140. Table 5 indicates that while there is some distribution of items that require coder judgement and those that do not across the aspects, they are not distributed evenly. The reflection and evaluation aspect tasks are assessed through a larger percentage of constructed response items, which require expert coder judgment.

141. Given that the delivery of the 2015 assessment will be computer-based, it may be possible to use computer coding for some responses not requiring expert judgment without affecting the construct or attributes of the items.

Transition from paper-based delivery to computer-based delivery

142. The main mode of delivery for the PISA 2009 assessment was paper-based. In moving to computer-based delivery for 2015, care must be taken to maintain comparability between the two assessments. Some of the considerations that are being made when transposing items between paper and computer modes are discussed below.

> ***Item types:*** The computer provides a range of opportunities for designers of test items, including new item formats (*e.g.*, drag-and-drop, hotspots). Since the purpose of the 2015 assessment is to maintain trend there is less opportunity to exploit innovative item-types. The majority of response formats will remain unchanged for 2015 although some drop-down or hotspot items may be used to enable computer-coding of items which were previously human-scored, only where no expert judgement is required and the item construct is not impacted.
>
> ***Stimulus presentation:*** A feature of fixed-texts defined in the construct is that 'the extent or amount of the text is immediately visible to the reader.' (p.18) Clearly it is impossible, both on paper and on screen, to have long texts display in a single page or screen. To allow for this and still satisfy the construct of fixed-texts, pagination will be used for texts rather than scrolling. Texts which go to more than one page will be presented in their entirety before the student sees the first question. This is illustrated in the *Athens* stimulus shown below.
>
> ***IT skills****:* Just as pencil and paper assessments rely on a set of fundamental skills for working with printed materials, so computer-based assessments rely on a set of fundamental skills for using computers. These include knowledge of basic hardware (*e.g.*, keyboard and mouse) and basic conventions (*e.g.*, arrows to move forward and specific buttons to press to execute commands). The intention is to keep such skills to a minimal core level.

143. There is research evidence that a computer-based testing environment can influence students' performance in reading. Some early studies indicated that reading speed was slower in a computer-based environment (Dillon, 1994) and less accurate (Muter *et al*., 1982), although it should be noted that these studies were conducted on proof-reading tasks, not in an assessment situation. There is a large body of

more recent literature on paper and computer-based tests' equivalency (see, *e.g.* Macedo-Rouet *et al*., 2009; Paek, 2005) however these still reveal conflicting findings. A meta-analysis of studies looking at K-12 students' math and reading achievement (Wang *et al*, 2008) indicated that overall, administration mode has no statistically significant effect on scores. A mode effects study was conducted as part of the PIAAC field test. In this study, adults were randomly assigned to either a computer- based or paper-based assessment of literacy and numeracy skills. The majority of the items used in the paper delivery mode were adapted for computer delivery and used in this study. Analyses of these data revealed that almost all of the item parameters were stable across the two modes, thus demonstrating the ability to place respondents on the same literacy and numeracy scale. This study, along with the results, will be written up as part of the PIAAC Technical Report, which is scheduled for release in October 2013. Given this, it is hypothesised that 2009 reading items can be transposed onto screen without impacting on trend. Nevertheless, evidence will be gathered and analysed in the planned field test mode study.

2015 Mode Study: Placeholder

144. A similar study to the PIAAC mode study described in paragraph 143 is planned for the PISA 2015 field trial. Students will be randomly assigned to either a computer-based or paper-based assessment of Reading, Mathematical and Scientific Literacy. Each domain will include 6 clusters of paper-based trend items that have been used in previous cycles of PISA. These items will be adapted for computer delivery so that countries opting to take the computer-based delivery option will be able to link back to previous cycles and will be comparable with countries choosing the paper-based option. It should be noted that some two thirds of the items from PISA use objective scoring such as multiple choice, true false, and simple open ended response formats that are easily adapted and reliably scored by computer; the rest are scored by human coders within each country. These more complex open ended items will be retained and scored in a similar fashion for PISA 2015. Analyses of the PISA field trial will be used to determine the comparability between the two modes of presentation across all trend items. Results will be presented to the TAG, the OECD and to all participating countries in 2014.

Coding and scoring

144. Codes are applied to test items, either by a more or less automated process of capturing the alternative chosen by the student for a multiple choice answer, or by a human judge (expert coder) selecting a code that best captures the kind of response given by a student to an item that requires a constructed response. The code, of either type, is then converted to a score for the item. Scoring is relatively simple with multiple-choice items or other closed response format items such as selecting an item from a list: the student has either chosen the designated correct answer or not, so the item is scored as 1 or 0 respectively.

145. Partial-credit models allow for more complex scoring of constructed response items. Some answers, even though incomplete, are better than others. Given that incomplete answers indicate a higher level of reading literacy than inaccurate or incorrect answers, they receive partial credit. Such items are then scored polytomously – that is, there is a full credit score, one or more partial credit scores, and a no credit score. Psychometric models for such polytomous scoring are well established and in some ways are preferable to dichotomous scoring (full credit or no credit), as they use more of the information in the responses. Interpretation of polytomous scoring is more complex, however, as each task will have several locations on the difficulty scale: one for the full-credit answer and others for each of the partial-credit answers. Partial-credit scoring is used for some of the more complex constructed response items in PISA.

146. There is a great range of constructed response tasks. Some require little judgement on the coder's part; these include tasks that ask the reader to simply mark parts of the text to indicate an answer or to list a few words. Such tasks may be considered for computer-coding. Others require considerable judgement on the part of coders, as for example when the reader is asked to explain the main idea of a text in his or her own words. Such tasks will remain human-coded for PISA 2015.

Extending the descriptive power of the PISA scales by manipulating item difficulty

147. In PISA 2000, PISA 2003 and PISA 2006 it was noted that, while the level of proficiency of students can be located accurately, there is a shortage of descriptive information about what students at the extremes – particularly at the lower end of the distribution – know and can do as readers. This is because there were few existing PISA tasks at the very easy end and the difficult end, where the proficiency level of significant numbers of students in all participating countries is located. In developing tasks for PISA 2009, therefore, there was an emphasis on including some very easy and some very difficult items. In addition to enhancing the descriptive power of the scale, better matching of the item difficulties to the student achievement distributions in each country improved the reliability of the population parameter estimates. Moreover, the test experience for individual students, particularly those performing at very low levels, has become more satisfying.

148. Developing items for the lower levels of proficiency was achieved by manipulating elements from PISA's descriptive framework as follows:

- using shorter and simpler texts
- ensuring closer literal match of terms between the item and the text
- providing more direction about the location in the text of the information relevant for solving the item
- addressing personal and familiar experiences in reflecting on and evaluating content items, rather than remote, abstract issues
- addressing concrete features in reflecting on and evaluating form items

Example Items

Macondo

Dazzled by so many and such marvellous inventions, the people of Macondo did not know where their amazement began. They stayed up all night looking at the pale electric bulbs fed by the plant that Aureliano Triste had brought back when the train made its second trip, and it took time and effort for them to grow accustomed to its obsessive toom-toom. They became indignant over the living images that the prosperous merchant Don Bruno Crespi projected in the theatre with the lion-head ticket windows, for a character who had died and was buried in one film, and for whose misfortune tears of affliction had been shed, would reappear alive and transformed into an Arab in the next one. The audience, who paid two centavos apiece to share the difficulties of the actors, would not tolerate that outlandish fraud and they broke up the seats.

The mayor, at the urging of Don Bruno Crespi, explained by means of a proclamation that the cinema was a machine of illusions that did not merit the emotional outburst of the audience. With that discouraging explanation many felt that they had been the victims of some new and showy

gypsy business and they decided not to return to the movies, considering that they already had too many troubles of their own to weep over the acted-out misfortunes of imaginary beings.

149. Macondo is a piece of prose from the novel One Hundred Years of Solitude by the Colombian author Gabriel Garcia Márquez. It is classified as belonging to the personal situation because it was written for readers' interest and pleasure. The Macondo unit in PISA is introduced with a brief paragraph to orientate the reader: "The passage on the opposite page is from a novel. In this part of the story, the railway and electricity have just been introduced to the fictional town of Macondo, and the first cinema has opened." The people's reaction to the cinema is the focus of the passage. While the historical and geographical setting of the extract is exotic for most readers, going to the movies is within the experience of 15-year-olds, and the characters' responses are at the same time intriguing and humanly familiar. Within the continuous text format category, Macondo is an example of narrative writing in that it shows, in a manner typical of this text type, why characters in stories behave as they do, recording actions and events from the point of view of subjective impressions.

150. The Macondo unit comprises tasks covering the aspects of integrate and interpret and reflect and evaluate. One of the tasks is reproduced below.

Question 3: Macondo

At the end of the passage, why did the people of Macondo decide not to return to the movies?

A. They wanted amusement and distraction, but found that the movies were realistic and depressing.

B. They could not afford the ticket prices.

C. They wanted to save their emotions for real-life occasions.

D. They were seeking emotional involvement, but found the movies boring, unconvincing and of poor quality.

The correct answer is C.

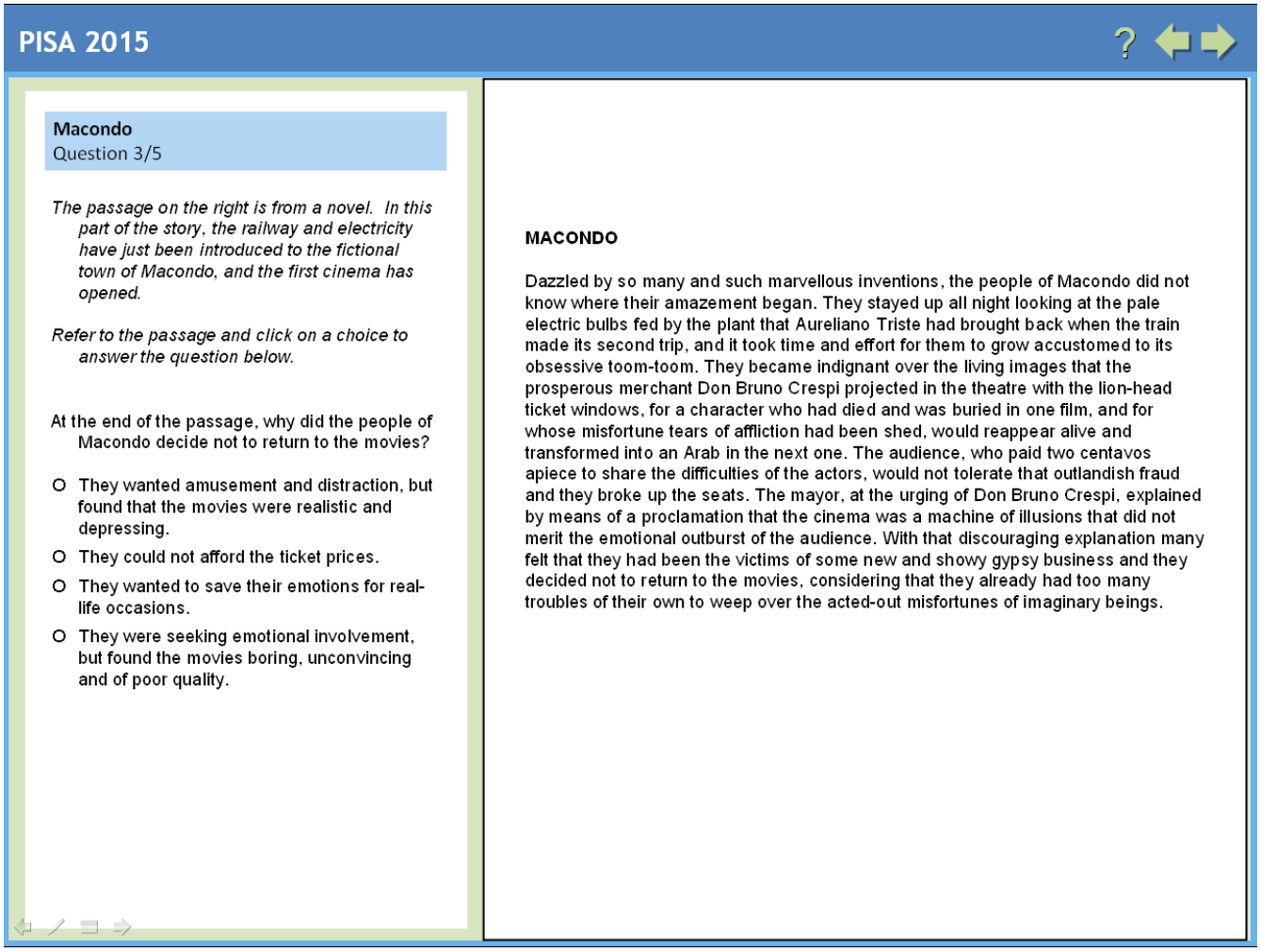
151. This task requires integrating and interpreting to form a broad understanding. In order to gain credit, students need to synthesise elements across the text to identify the reason that the characters in the story behaved as they did at the end. In selecting option C, they must reject some reasons that could plausibly explain why people might decide not to go to the movies, represented by distractors that are based on preconceptions rather than on the text.

Table 6. Framework characteristics of sample task: Macondo

Situation	Personal
Text format	Continuous
Text type	Narration
Aspect	Integrate and interpret: Form a broad understanding
Item format	Multiple choice

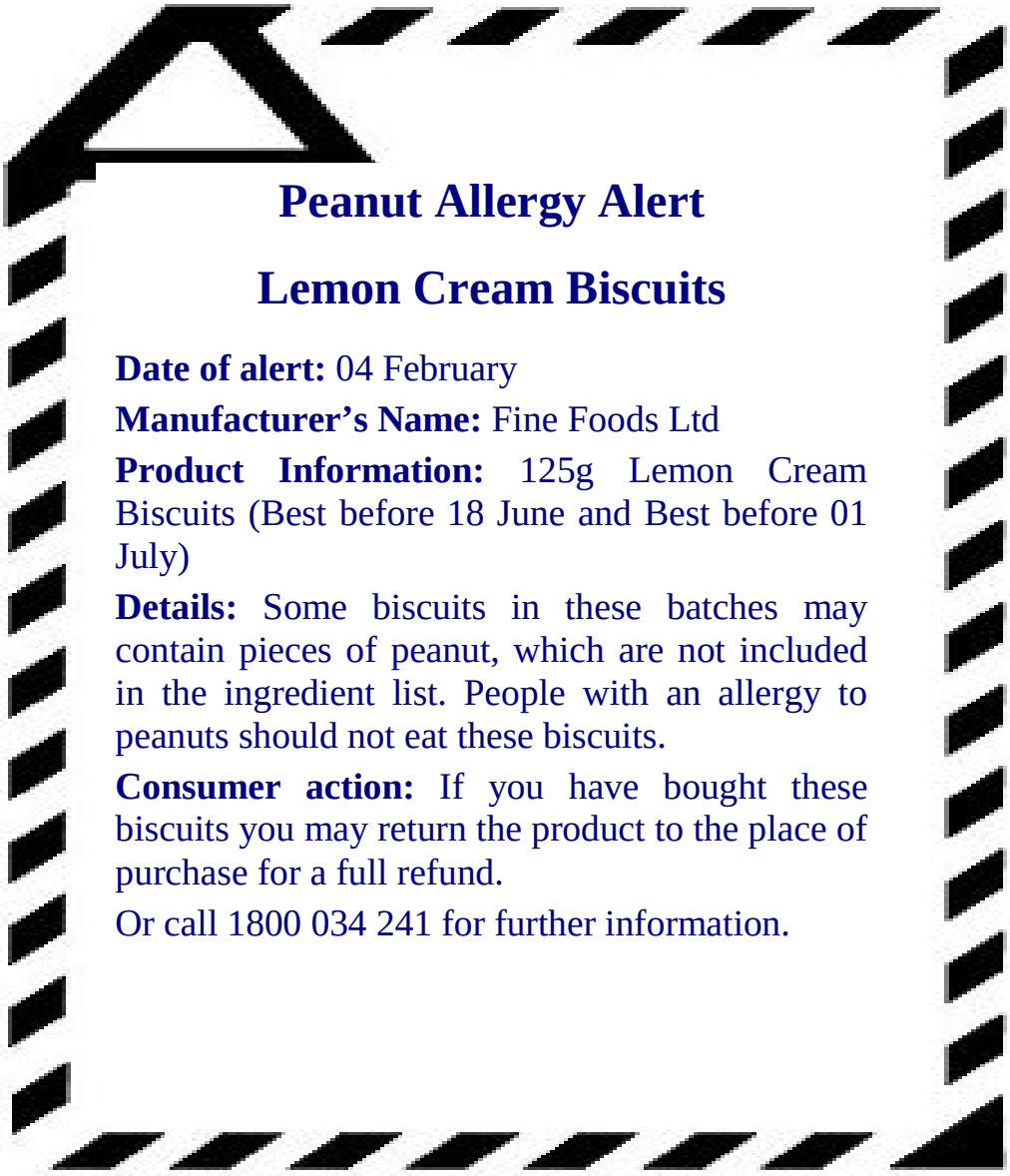
152. Figure 5 below shows how Macondo Question 3 might look in the 2015 platform. The framework characteristics are retained.

Figure 5 A mock-up of Macondo in computer-based mode



153. The following two examples illustrate tasks designed explicitly to address the extremes of the difficulty continuum in PISA reading. The first is a very easy item, the second a very difficult one. These two items were administered in the PISA 2009 field trial.

Supermarket notice



154. This public notice consists of a very short text that has an everyday function: to warn about the possible danger of a product to consumers and to give advice to return the product for a refund. While the formatting of the stimulus reflects the international standard for product recall notices, many students may not have seen this kind of notice. Nevertheless, the content of the warning is clearly set out and a minimum number of words is used. Lemon biscuits were chosen as the product because of their familiarity and likely appeal. As mentioned above, in developing very easy items, short simple pieces of stimulus with familiar content were sought. This was not only to make the cognitive load of the items lighter, but also to present texts that were unlikely to intimidate students with low reading proficiency, since such readers can easily be discouraged from even attempting to read something that they believe looks too hard or too long. The text format classification of the supermarket notice is non-continuous, as it consists of a list of described

features. In terms of text type, the notice is instructional: it provides directions on what to do if you have bought the product.

155. Of the five questions addressing this stimulus that were administered in the field trial, four were successfully completed by more than 80% of students. The one reproduced below was the easiest of all, with well over 90% of students gaining full credit. The numbering of the questions is identical to the numbering used in the test booklets given to students

Question 3: Supermarket notice

What is the name of the company that made the biscuits?

.....

156. To answer this question successfully the student needs to locate a single explicitly stated piece of information in the text, using a synonymous match between the task direction and the text (company/manufacturer). The fact that the whole text is very short, and that the needed information is near the beginning of the text, adds to the easiness of the task. The response format for the task is described as a closed constructed response, since only one answer (with a small range of variants: Fine Foods or Fine Foods Ltd.) is given full credit.

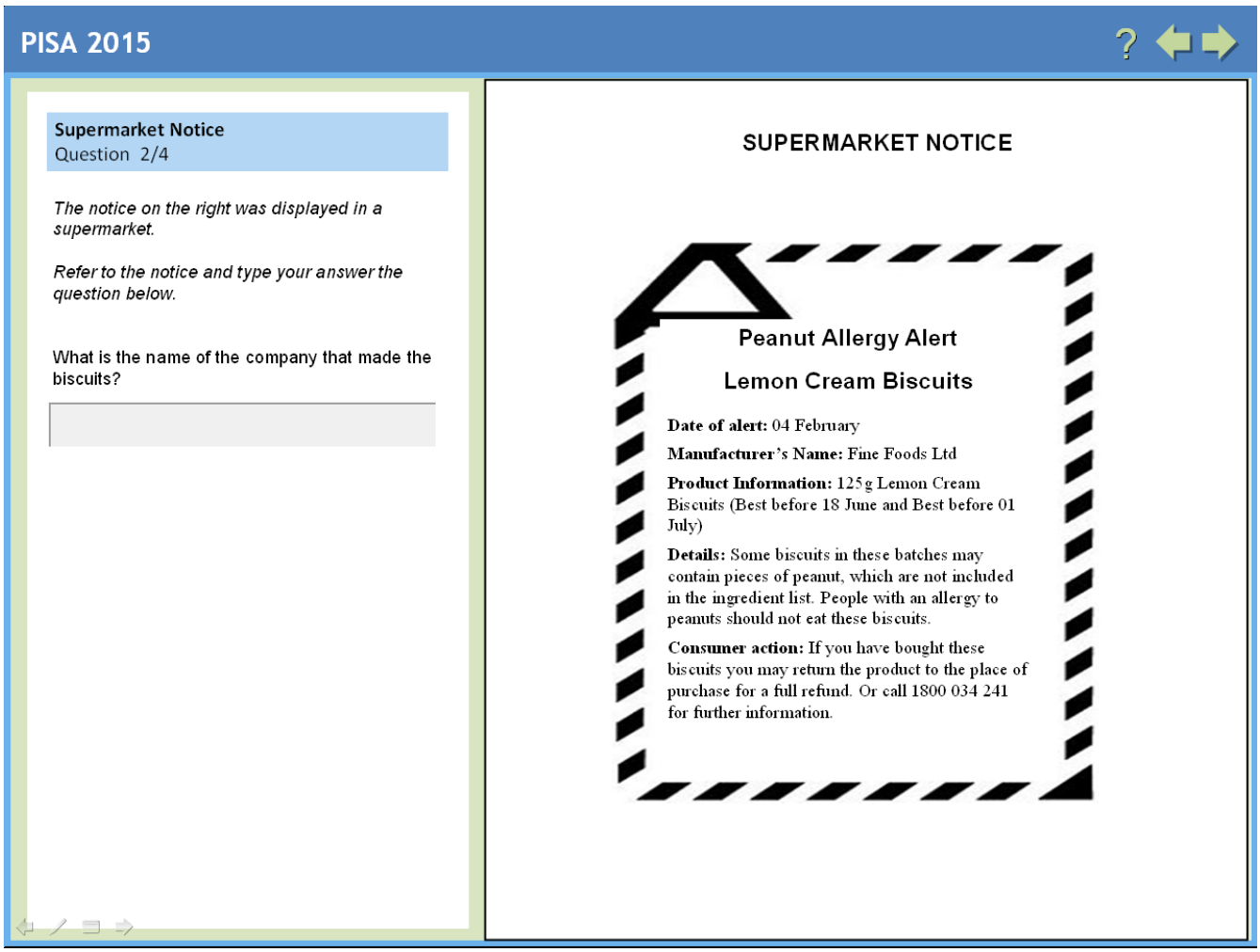
157. Table 7 summarises the framework characteristics of the Supermarket Notice question.

Table 7. Framework characteristics of sample task Supermarket Notice

Situation	Public
Text format	Non-continuous
Text type	Instruction
Aspect	Access and retrieve: Retrieve information
Item format	Closed constructed response

158. Figure 6 below shows how Supermarket Notice Question 3 might look in the 2015 platform. The framework characteristics are retained.

Figure 6 A mock-up of Supermarket notice in computer-based mode



159. The last of the examples of reading items included in this section, was designed to help elaborate the description of student proficiency at the top end of the scale.

Democracy in Athens

Part A

Thucydides was a historian and military man who lived in the fifth century BC, during the Classical Greek period. He was born in Athens. During the Peloponnesian War (431 BC to 404 BC) between Athens and Sparta he was in command of a fleet whose mission was to protect the city of Amphipolis in Thrace. He failed to reach the city in time. It fell into the hands of Brasidas, the Spartan general, which forced Thucydides into a twenty-year exile. This granted him the opportunity of collecting detailed information from the two warring factions and the possibility of doing research for his work History of the Peloponnesian War.

Thucydides is regarded as one of the great historians of Ancient times. He focuses on natural causes and the behaviour of each individual rather than on fate or the intervention of divinities to explain the evolution of History. In his work, facts are not presented as mere anecdotes; rather,

they are explained in an attempt to find out the reasons that led the main characters to act as they did. Thucydides' emphasis on the behaviour of individuals is why he sometimes introduces fictitious speeches: these help him explain the motivations of the historical characters.

Part B

Thucydides attributes to Pericles (fifth century BC), the Athenian ruler, the following speech in honour of the soldiers who fell in the first year of the Peloponnesian War.

Our system of government does not copy the laws of neighbouring states; we are rather a pattern to others than imitators ourselves. Our system is called democracy, since its administration depends on the many instead of the few. Our laws afford equal rights to all in their private affairs, whereas the prestige in public life depends on merit rather than on social class.

Social class does not prevent a person from holding any public position either ( ). And, at the same time that we do not interfere in private affairs, we do not break the law as regards public matters. We give our obedience to those whom we put in positions of authority, and we obey the laws themselves, especially those which are for the protection of the oppressed, and those unwritten laws which it is an acknowledged shame to break.

Furthermore, we provide plenty of means for the pleasure of the mind. The games and sacrifices we celebrate all the year round, and the elegance of our private places of residence, form a daily source of pleasure that helps to banish any worry; while the many inhabitants of the city draw the produce of the world into Athens, so that to the Athenian the fruits of other countries are as familiar as those of his own.

160. Democracy in Athens consists of two fairly short but dense texts. The first is classified as expository, although the first paragraph if considered alone could better be described as narration, since it gives an account of when something happened, referring to a sequence of events in a person's life. However, in the context of the whole of Part A, the biographical paragraph serves as an introduction to the more substantial second paragraph, which places Thucydides in the context of ideas, describing his originality as an historian. Part A as a whole, then, provides an explanation of concepts or mental constructs, which is a marker of expository texts.

161. Part B presents a sample of one of the "fictitious speeches" written by Thucydides that are referred to in Part A. Part B is an argumentative text, words imagined as having been spoken by Pericles in a speech of political persuasion. Part of the challenge of reading the stimulus as a whole is understanding the relationship between the two texts: it is not stated explicitly but can be inferred from the last sentence of Part A and the introduction to Part B. Other features that make this stimulus likely to be relatively difficult for 15-year-olds are its remoteness from their everyday experience, the abstractness of the language and the formal register, particularly of the rendition of Thucydides' writing. On the other hand it is reasonable to suppose that most students at the end of their compulsory schooling are fairly familiar with history as a concept, and have some notion – even if not necessarily articulated – of what democracy might be. This assumed background was judged to provide sufficient context for students to approach the Democracy in Athens material.

162. The questions related to this stimulus that were administered in the PISA 2009 field trial reflect two of the aspects: access and retrieve and integrate and interpret. Some of the questions focus on one or other of the two Parts, and some are designed to draw on an integrated understanding of the two. The one shown here draws mostly on Part B. The numbering of the questions is identical to the numbering used in the test booklets given to students.

Question 3: Democracy in Athens

One purpose of the speech in Part B was to honour soldiers who fell in the first year of the Peloponnesian War.
What was ANOTHER purpose of this speech?
.....
.....

163. This is one of the most difficult items administered in the PISA 2009 field trial. It is coded as a partial credit item, with full credit typically gained only by the most proficient readers in the field trial sample. To gain full credit, the response needs to identify the purpose of Pericles' speech by linking it to its context, which is partly provided in the expository text as well as more directly by the speech itself and by its introduction. The full credit response therefore needs to be underpinned by a full and detailed understanding of both texts, and to use a high level of inference in an unfamiliar context, dealing with some ambiguity (about the authorship of the speech). Responses in this category refer to Pericles' political motivation, possibly by mentioning such purposes as persuading soldiers to continue the struggle; consoling the families of the dead; fostering pride in the citizens of Athens; or stressing the virtues of Athens compared to Sparta or other cities. The following are examples of full credit responses:

- to make people proud of Athens
- to promote the benefits of the Athenian democracy
- making people think Athens is still ok, despite the fact that they are in trouble right now
- to reinforce positive thinking and positive attitudes
- to make people aggressive against Spartans

164. Alternatively full credit answers could refer to the more abstract level of meaning implied in Part A: Thucydides' purpose of understanding Pericles' psychology or way of thinking for example;

- to explain the motivation of Pericles as an historical character.

165. Full-credit answers do not need to be long or elaborate; yet just over a quarter of responses in the field trial were in this category. About one-fifth of participants in the field trial were able to demonstrate a partial understanding of the text, indicating that its substantial content was about democracy but without registering the persuasive intent. Responses such as the following were assigned a partial credit:

- to introduce democracy
- to explain democracy to the people

166. Figures 7 to 9 below shows how the Athens unit stimulus and Question 3 might look in the 2015 platform. In the first screen the student is shown the first page containing Part A. They are explicitly told there are two pages to view. The page numbering and flipped corners also indicate the length of the text. The second screen takes them to Part B. When they click Next they are taken back to the first page and shown the first question. Note that they are always taken back to the first page, regardless of whether this

contains the information required to answer the question since part of the construct is to access and retrieve the correct information.

Figure 7 A mock-up of Athens in computer-based mode: Part A

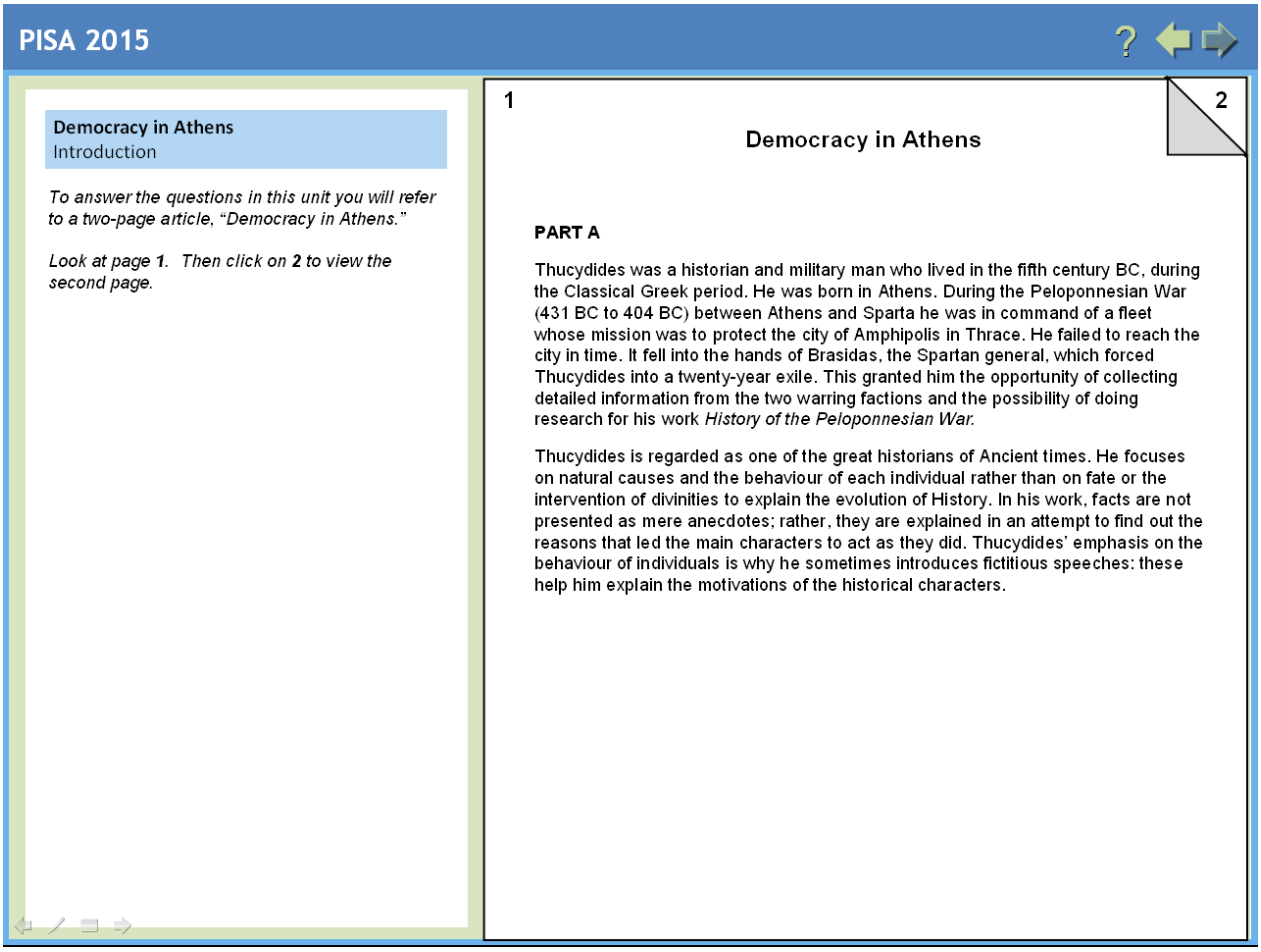


Figure 8 A mock-up of Athens in computer-based mode: Part B

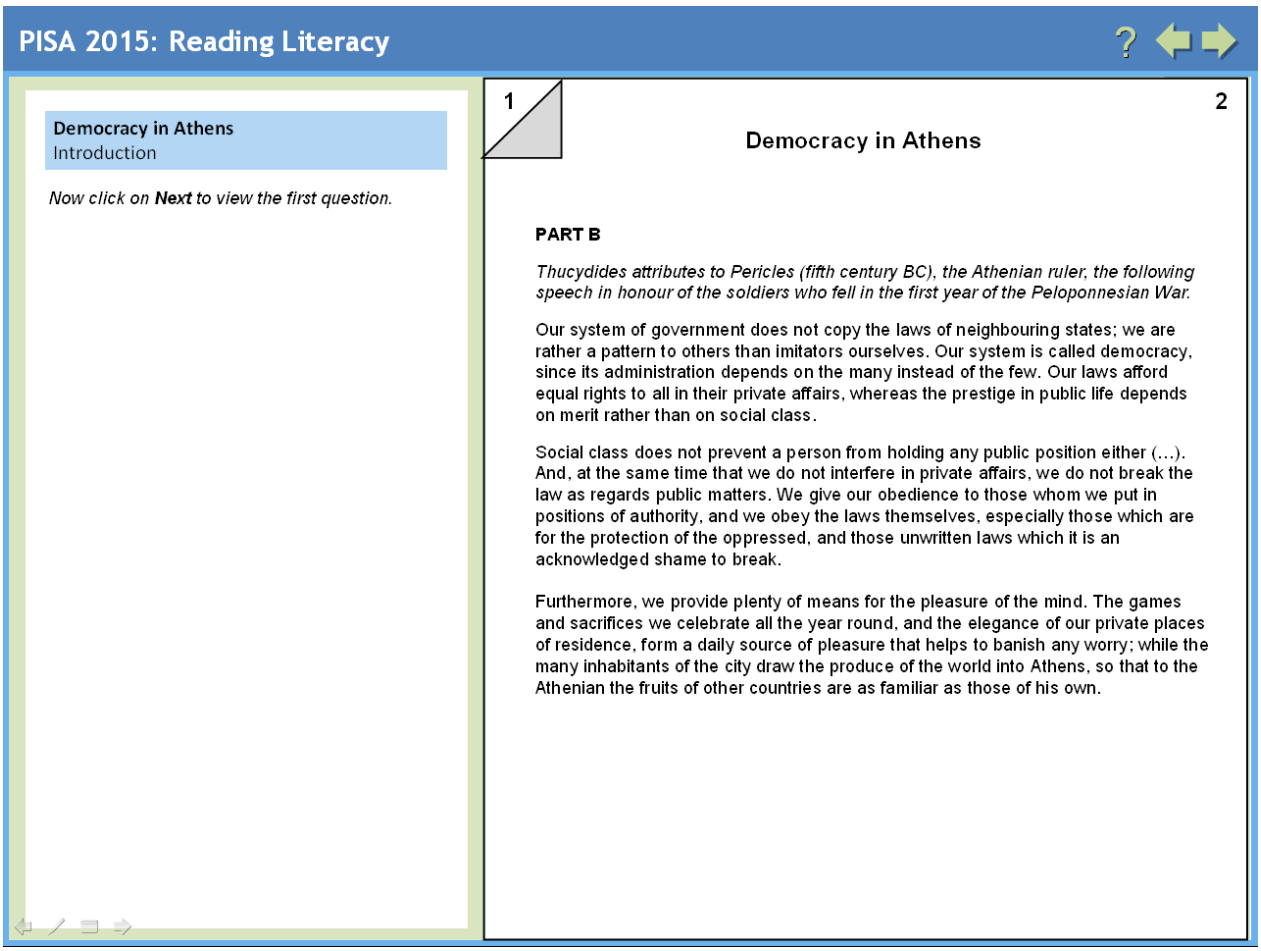
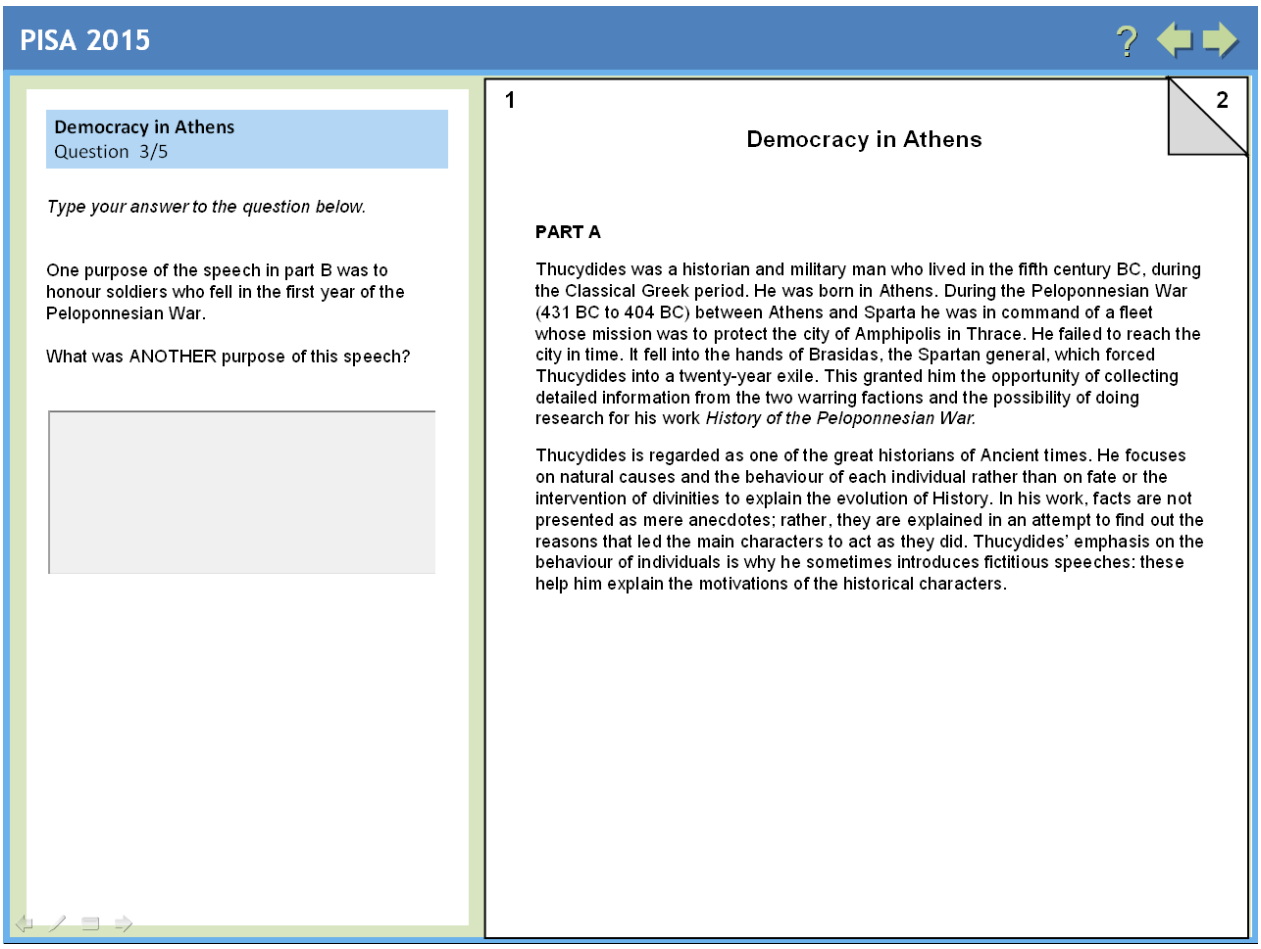


Figure 9 A mock-up of Athens in computer-based mode: Question 3



Motivational and Behavioural Constituents of Reading Literacy

167. Reading engagement and metacognition, which were discussed very briefly in earlier versions of the framework were given a more prominent position and more elaborated discussion in the PISA 2009 cycle, in recognition of their importance in relation to reading proficiency. The measurement of reading engagement and metacognition provided valuable information as reported in "PISA 2009 Results: What Students Know and Can Do" (OECD, 2010). As reading is a minor domain in 2015, this measurement will not be repeated in 2015.

REPORTING PROFICIENCY IN READING

168. PISA reports in terms of proficiency scales which are interpretable in policy terms. In PISA 2000, when reading was the major domain, the results of the reading literacy assessment were first summarised on a single composite reading literacy scale having a mean of 500 and a standard deviation of 100. In addition to the composite scale, student performance was also represented on five subscales: three process (aspect) subscales (retrieving information, interpreting texts and reflection and evaluation) and two text format subscales (continuous and non-continuous) (OECD, 2001, 2002). These five subscales made it possible to compare mean scores and distributions among subgroups and countries by various components of the reading literacy construct. Although there is a high correlation between these subscales, reporting results on each subscale revealed interesting interactions among the participating countries. Where such interactions occur, they can be examined and linked to the curriculum and teaching methodology used. In some countries, the important question may be how to teach the current curriculum better. In others, the question may not only be how to teach but also what to teach. In PISA 2009, reading was again the major domain, as it was in 2000. A reporting scheme including subscales as well as a composite scale was used.

169. In both PISA 2003 and 2006, when reading was a minor domain, and fewer reading items were administered to participating students, a single reading literacy trend scale was reported based upon the overall composite scale (OECD, 2004, OECD 2007). In 2009 reading was a major domain and reporting on subscales was again possible (OECD, 2010). For PISA 2012 and 2015, reading is once again a minor domain, which precludes reporting on subscales.

Interpreting and using the data

170. The reading literacy tasks are constructed and administered to nationally representative samples of 15-year-old students in participating countries to ensure that the assessment provides the broadest possible coverage of the domain as defined here. However, no individual student can be expected to respond to the entire set of tasks. Accordingly, the survey is designed to give each student participating in the study a subset of the total pool of tasks, while at the same time ensuring that each of the tasks is administered to nationally representative samples of students.

171. Reading literacy tasks are arranged along a scale that indicates progressively the level of difficulty for students and the level of skill required to answer each item correctly. The scale summarises both the proficiency of a person in terms of his or her ability and the complexity of an item in terms of its difficulty.

172. Reading literacy tasks used in PISA vary widely in situation, text format, and task requirements, and they also vary in difficulty. This range is captured through what is known as an item map. The item map provides a visual representation of the reading literacy skills demonstrated by students at different points along the scale. The map contains a brief description of a selected number of released assessment tasks along with their scale values. These descriptions take into consideration the specific skills that the item is designed to assess and, in the case of open-ended tasks, the criteria used for judging the item correct. An examination of the descriptions provides some insight into the range of processes required of students and the proficiencies they need to demonstrate at various points along the reading literacy scale.

Item maps were built to illustrate what progress means along the scales developed for PISA 2009 (OECD, 2010).

Levels of reading literacy proficiency

173. Just as students within each country are sampled to represent the national population of 15-year-old students, each reading literacy task represents a class of tasks from the reading literacy domain. Tasks at the lower end of the reading scale and subscales differ from those at the higher end. Difficulty is in part determined by the length, structure and complexity of the text itself. However, while the structure of a text contributes to the difficulty of an item, what the reader has to do with that text, as defined by the question or instruction, interacts with the text and affects the overall difficulty. A number of variables that can influence the difficulty of any reading literacy task have been identified, including the complexity and sophistication of the mental processes integral to the aspect of the task (retrieving, interpreting or reflecting), the amount of information to be assimilated by the reader and the familiarity or specificity of the knowledge that the reader must draw on both from within and from outside the text. In an attempt to capture this progression of complexity and difficulty in PISA 2000, the composite reading literacy scale and each of the subscales were divided into the following levels:

Table 8. 2000 Reading Scale

Level	Score points on the PISA scale
5	More than 625
4	553 to 625
3	481 to 552
2	408 to 480
1	335 to 407
Below level 1	Less than 335

174. These levels were a useful way to explore the progression of reading literacy demands within the composite scale and each subscale.

175. The scale summarises both the proficiency of a person in terms of his or her ability and the complexity of an item in terms of its difficulty. The mapping of students and items on one scale represents the idea that students are more likely to be able to successfully complete tasks mapped at the same level on the scale (or lower), and less likely to be able to successfully complete tasks mapped at a higher level on the scale.

176. These levels as they were defined for PISA 2000 were kept for the composite scale used to measure trends in PISA 2009 and newly constructed items helped to improve descriptions of the existing levels of performance and, and furnish descriptions of levels of performance above and below those established in PISA 2000. However, the scales were extended to level 6, higher than 698, and level 1b was introduced at the bottom of the scale, 262 to less than or equal to 335 (OECD, 2012)

Table 9. 2009 Reading Scale

Level	Score points on the PISA scale*
6	Higher than 698.32
5	Higher than 625.61 and less than or equal to 698.32
4	Higher than 552.89 and less than or equal to 625.61
3	Higher than 480.18 and less than or equal to 552.89
2	Higher than 407.47 and less than or equal to 480.18
1a	Higher than 334.75 and less than or equal to 407.47
1b	262.04 to less than or equal to 334.75

Source: See the 2009 Technical Report for the scale descriptors (OECD, 2012)

177. For PISA 2015, the same levels will be used as in 2009.

178. Given that the top of the reading literacy scale currently has no bounds, there is arguably some uncertainty about the upper limits of proficiency of extremely high performing students. However such students are likely to be capable of performing tasks characterised by the highest level of proficiency. For students who are at the bottom end of the reading literacy scale there is a greater issue. Although it is possible to measure the reading proficiency of students performing below Level 1, at this stage their proficiency cannot be described. Level 1 begins at 335, yet a certain and significant percentage of students in each country is estimated to be below this point on the scale. In developing new material for PISA 2009 an effort was made to design items that measure reading skills and understandings located below the current Level 1

SUMMARY

179. An essential concern of PISA is to provide information to policy makers about trends over time. In light of that, the analysis of trends must be given priority in any reporting plans, and this will be ensured in PISA 2015 by the construction of a scale that is based entirely on trend reading tasks. In anticipating a range of options for reporting, the PISA reading literacy framework and assessment are designed to provide an array of data capable of richly informing the work of policy makers, educators, and researchers.

180. The notion of reading literacy in PISA goes beyond the simple measurement of a student's capacity to decode and understand literal information. Reading literacy in PISA also involves understanding, using, reflecting on and engaging with written texts, both to achieve personal goals and to participate actively in society.

181. The construct of reading literacy that has been described in this document preserves many of the principles and operational features of PISA 2000 and 2009. With the move from paper-based to computer-based testing in 2015, the framework has been updated to consider the impact of such change, including presenting sample items as they might look in the new mode. A change for 2015 is the renaming of the categorisation of 'medium: print and electronic' to 'Text display space: Fixed-text and dynamic-text'; however it is important to note that the underlying characteristics and features of the texts themselves remain the same.

182. The introduction of new perspectives on reading literacy will be needed for PISA 2018, when reading will again be the major domain, but is not possible for PISA 2015 where reading is a minor domain and only trend items will be included. The important additions for PISA 2009, namely the inclusion of dynamic texts and the measurement of motivational and behavioural constituents will most likely be taken up again and developed further for PISA 2018.

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