CHAPTER 1

PIRLS 2016 Reading Framework

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The PIRLS 2016 Reading Framework and the instruments developed to assess this framework reflect IEA's commitment to be forward thinking and incorporate the latest approaches to measuring the reading achievement of young students in their fourth year of schooling. PIRLS is based on the broad notion of what the ability to read means—a notion that includes the ability to reflect on written texts and to use these texts as tools for attaining individual and societal goals, also known as "reading to do" (Stiggins, 1982). This view is increasingly relevant in today's society, where greater emphasis continues to be placed on students' ability to use the information they gain from reading (Organisation for Economic Cooperation and Development, 1995; 1997; 2000; 2001; 2005; 2010). Emphasis is shifting from demonstrating fluency and basic comprehension to demonstrating the ability to apply what is read to new situations or projects (Coulombe, Trembly, & Marchand, 2004; Smith, Mikulecky, Kibby, & Dreher, 2000; see also *PIRLS 2011 Encyclopedia*).

The PIRLS framework for assessing reading achievement was initially developed for the first assessment in 2001, using IEA's 1991 Reading Literacy Study (Elley, 1992; 1994; Wolf, 1995) as the basis for the PIRLS definition of reading literacy and for establishing the aspects of reading comprehension to be assessed. Since then, the PIRLS assessment framework has been updated for each subsequent assessment cycle (Campbell, Kelly, Mullis, Martin, & Sainsbury, 2001; Mullis, Kennedy, Martin, & Sainsbury, 2006; Mullis, Martin, Kennedy, Trong, & Sainsbury, 2009).

A Definition of Reading Literacy

The PIRLS definition of reading literacy is grounded in IEA's 1991 study, in which reading literacy was defined as "the ability to understand and use those written language forms required by society and/or valued by the individual."

With successive assessments, this definition has been elaborated so that it retains its applicability to readers of all ages and a broad range of written language forms, yet makes explicit reference to aspects of the reading experience of young students as they become proficient readers, highlights the widespread importance of reading in school and everyday life, and acknowledges the increasing variety of texts in today's technological world. Currently, the PIRLS definition of reading literacy is as follows:

> Reading literacy is the ability to understand and use those written language forms required by society and/or valued by the individual. Readers can construct meaning from texts in a variety of forms. They read to learn, to participate in communities of readers in school and everyday life, and for enjoyment.

This view of reading reflects numerous theories of reading literacy as a constructive and interactive process (Anderson & Pearson, 1984; Chall, 1983; Kintsch, 1998; 2012; 2013; Ruddell & Unrau, 2004; Rumelhart, 1985). Meaning is constructed through the interaction between reader and text in the context of a particular reading experience (Britt, Goldman, & Rouet, 2012; Snow, 2002). Readers are regarded as actively constructing meaning as well as knowing effective reading strategies and how to reflect on reading (Afflerbach & Cho, 2009; Langer, 2011).

Before, during, and after reading, readers use a repertoire of linguistic skills, cognitive and metacognitive strategies, as well as background knowledge to construct meaning (Baker & Beall, 2009; Kintsch, 2012; 2013; Pressley & Gaskins, 2006; Rapp & van den Broek, 2005). In addition, the context of the reading situation can support the construction of meaning by promoting engagement and motivation to read, but the context also can place specific demands that might not support the construction of meaning (Christianson & Luke, 2011; Lorch, Lemarie, & Grant, 2011; Miller & Faircloth, 2009; Taboada, Tonks, Wigfield, & Guthrie, 2009).

In order to acquire knowledge of the world and themselves, readers can learn from a host of text types. Any given text type can take many forms and combinations of forms. These include traditional written forms, such as books, magazines, documents, and newspapers, as well as digital forms such as email, text messaging, and Internet websites where text often is integrated with various multimedia formats (Leu, Kinzer, Coiro, & Cammack, 2004; Leu, Kinzer, Coiro, Castek, & Henry, 2013; Rosell & Pahl, 2010; Reuda, 2013).

Throughout the framework, various sources that have provided a research and scholarly basis for the framework are referenced. These references are only a sample of the volumes of literature and research that have informed the PIRLS framework, including considerable research by countries participating in PIRLS.

Discussing what they have read with different groups of individuals allows young students to construct text meaning in a variety of contexts (Almasi & Garas-York, 2009; Murphy, Wilkinson, Soter, Hennessey, & Alexander, 2009). Social interactions about reading in one or more communities of readers can be instrumental in helping young students gain an understanding and appreciation of texts (Galda & Beach, 2001; Kucer, 2005). Socially constructed environments in the classroom or school library can give young students formal and informal opportunities to broaden their perspectives about texts and to see reading as a shared experience with their classmates and teachers (Alvermann & Moje, 2013; Guthrie, 1996). This can be extended to communities outside of school as young students talk with their families and friends about ideas and information acquired from reading.

Overview of the PIRLS Framework for Assessing Reading Achievement

Based on reading purposes and comprehension processes, the PIRLS framework provides the foundation for the PIRLS assessment of students' reading achievement in their fourth year of schooling, as well as for PIRLS Literacy, a literacy assessment that is an easier version of PIRLS, and ePIRLS, which extends PIRLS to assess online reading. As shown in Exhibit 1, the PIRLS framework focuses on the two overarching purposes for reading that account for most of the reading done by young students both in and out of school: for literary experience, and to acquire and use information. In addition, the PIRLS assessment integrates four broad-based comprehension processes within each of the two purposes for reading: focus on and retrieve explicitly stated information, make straightforward inferences, interpret and integrate ideas and information, and evaluate and critique content and textual elements.

Exhibit 1:   The PIRLS Reading Purposes and Comprehension Processes

Purposes for Reading
Literary Experience
Acquire and Use Information

Processes of Comprehension
Focus on and Retrieve Explicitly Stated Information
Make Straightforward Inferences
Interpret and Integrate Ideas and Information
Evaluate and Critique Content and Textual Elements

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It should be acknowledged that the purposes for reading and the processes of comprehension do not function in isolation from one another or from the context in which students live and learn.

PIRLS Framework Emphases in PIRLS, PIRLS Literacy, and ePIRLS

Although the two reading purposes and four comprehension processes form the basis for assessing PIRLS as well as PIRLS Literacy and ePIRLS, there are some differences in emphases across the assessments. Exhibit 2 presents the reading purposes and processes assessed by PIRLS and the percentages of the test devoted to each for PIRLS, PIRLS Literacy, and ePIRLS.

Exhibit 2: **Percentages of the PIRLS, PIRLS Literacy, and ePIRLS Reading Assessments Devoted to Each Reading Purpose and Comprehension Process**

	PIRLS	PIRLS Literacy	ePIRLS
Purposes for Reading			
Literary Experience	50%	50%	0%
Acquire and Use Information	50%	50%	100%
Processes of Comprehension			
Focus on and Retrieve Explicitly Stated Information	20%	50%	20%
Make Straightforward Inferences	30%	25%	30%
Interpret and Integrate Ideas and Information	30%	25%	30%
Evaluate and Critique Content and Textual Elements	20%		20%

Both PIRLS and PIRLS Literacy devote half of the assessment passages to each of the purposes for reading, while the ePIRLS online assessment focuses solely on reading to acquire and use information. The ePIRLS approach simulates websites from the Internet, through which students can navigate to accomplish school-based research projects or tasks. Because PIRLS Literacy is designed for students earlier in the process of learning to read, a larger percentage of items (50 percent of the assessment) are devoted to measuring foundational reading comprehension processes—the ability to focus on and retrieve explicitly stated information. Also, PIRLS Literacy has shorter reading passages with easier vocabulary and syntax.

Purposes for Reading

Throughout the world, reading literacy is directly related to the reasons people read; broadly, these reasons include reading for pleasure and personal interest, learning, and participation in society. The early reading of most young students centers on the first two reasons, and thus often includes reading of narrative texts that tell a story (e.g., storybooks or picture books) or informational texts that tell students about the world around them and answer questions. As young students develop their literacy abilities and are increasingly required to read in order to learn across the curriculum, reading to acquire information from books and other print materials becomes more important (Duke, 2004; Duke & Carlisle, 2011; Palincsar & Duke, 2004; Wharton-McDonald & Swiger, 2009).

Aligned with these reading purposes, both the PIRLS and PIRLS Literacy assessments focus on reading for interest or pleasure and reading to learn—that is, reading for literary experience and reading to acquire and use information. Because both purposes for reading are important for young students, the PIRLS and PIRLS Literacy assessments contain an equal proportion of material assessing each purpose. However, because much online reading is done for the purpose of acquiring information, ePIRLS specifically focuses on reading to acquire and use information.

The PIRLS and PIRLS Literacy assessment passages are classified by their primary purposes, and the accompanying questions address these purposes for reading. That is, passages classified as literary have questions addressing theme, plot events, characters, and setting, and those classified as informational are accompanied by questions about the information contained in the passages. Although the assessments distinguish between purposes for reading, the comprehension processes readers use are more similar than different for both purposes; therefore, the comprehension processes are evaluated across all passages, including the ePIRLS Internet-like texts.

Each purpose for reading often is associated with certain types of texts. For example, reading for literary experience often is accomplished through reading fiction, while reading to acquire and use information generally is associated with informative articles and instructional texts. However, the purposes for reading do not align strictly with text types. For example, biographies or autobiographies can be primarily informational or literary, but include characteristics of both purposes.

Texts often differ in the way in which ideas are organized and presented, eliciting a variety of ways to construct meaning (Goldman & Rakestraw, 2000; Kobayashi, 2002). Text organization and format can vary to a great degree, ranging from sequential ordering of written material to snippets of words and phrases arranged with pictorial and tabular data. The content, organization, and style that may be typical of a particular text genre have implications for the reader's approach to understanding the text (Alexander & Jetton, 2000; Graesser, Golding, & Long, 1996; Lorch, Lemarie, & Grant, 2011; Weaver & Kintsch, 1996).

As noted, it is in the interaction between reader and text that meanings are constructed and purposes are achieved. In selecting texts for the PIRLS assessments, the aim is to present a wide range of text types within each purpose for reading. The goal is to create a reading experience for students participating in each assessment that, as much as possible, is similar to authentic reading experiences they may have in and outside of school.

Reading for Literary Experience

In literary reading, readers engage with the text to become involved in events, settings, actions, consequences, characters, atmosphere, feelings, and ideas, and to enjoy language itself. In order to understand and appreciate literature, each reader must bring to the text his or her own experiences, feelings, appreciation of language, and knowledge of literary forms. For young readers, literature can offer the opportunity to explore situations and feelings they have not yet encountered.

Events, actions, and consequences depicted in narrative fiction allow readers to experience vicariously and reflect upon situations that, although they may be imagined, illuminate those of real life. The text may present the perspective of the narrator or a principal character, and a more complex text may even have several viewpoints. Information and ideas may be described directly or through dialogue and events. Short stories or novels sometimes narrate events chronologically, or sometimes make more complex use of time with flashbacks or time shifts.

The main form of literary texts used in the PIRLS and PIRLS Literacy assessments is narrative fiction. Given differences in curricula and cultures across the participating countries, it is difficult for PIRLS to include some forms of literary texts. For example, poetry is difficult to translate and plays are not widely taught in the primary grades.

Reading to Acquire and Use Information

Informational texts are both read and written for a wide variety of functions. While the primary function of informational text is to provide information, writers often address their subject matter with different objectives. Many informational texts are straightforward presentations of facts, such as biographical details or steps to accomplish a task; however, some informational texts are subjective. For example, authors may elect to convey facts and explanations through an expository summary, a persuasive essay, or a balanced argument. A reader must bring to these texts a critical mind in forming his or her own opinion.

In order to best address the various functions of texts, information can be presented differently, such as by varying the content, organization, and form. Young students may read informational texts that cover a range of content, including those that are scientific, historical, geographical, or social. These texts also may vary in the organization of the content conveyed. For example, historical facts may be organized chronologically, instructions or procedures sequenced step-by-step, and an argument presented logically (e.g., cause and effect, or compare and contrast).

Information can be presented in many different formats. Even informational pieces that are primarily presented via text may include a table to document facts or a picture to illustrate a description. Both print materials (e.g., manuals and newspapers) and websites present a considerable amount of information via lists, charts, graphs, and diagrams. In addition, words need not be in the form of continuous text, such as in advertisements or announcements, or in sidebars to the text that offer supplemental information such as definitions, lists, or timelines. As noted, different presentations of textual content can demand that readers apply different comprehension processes. Finally, it also should be emphasized that a piece of informational text often incorporates one or more methods of presenting information.

The informational texts used in the PIRLS assessments reflect students' authentic experiences with reading informational text in and out of school. Typically, these passages, as well as some of the ePIRLS websites, have been written by authors who understand writing for a young audience, and are provided by the participating countries as representative of the informational materials their students read.

Processes of Comprehension

Readers construct meaning in different ways. Therefore, PIRLS assesses four broad-based processes of comprehension typically used by fourth grade readers: focus on and retrieve explicitly stated information; make straightforward inferences; interpret and integrate ideas and information; and evaluate and critique content and textual elements. Transcending these processes are the metacognitive processes and strategies that allow readers to examine their understanding and adjust their approach (Baker & Beall, 2009; Kintsch & Kintsch, 2005; Paris, Wasik, & Turner, 1996; Perfetti, Landi, & Oakhill, 2005; Pressley, 2002; vanDijk & Kintsch, 1983). In addition, the knowledge and background experiences that readers bring to reading equip them with an understanding of language, texts, and the world, through which they filter their comprehension of the material (Alexander & Jetton, 2000; Beach & Hynds, 1996; Galda & Beach, 2001; Kintsch, 2012; 2013; Wolfe & Goldman, 2005).

In the PIRLS assessments, the four comprehension processes are used as a foundation for developing the comprehension questions which are based on each reading passage (or set of passages). Across each assessment, the variety of questions measuring the range of comprehension processes enables students to demonstrate a range of abilities and skills in constructing meaning from written texts. Along with each process and its components, examples of questions that may be used to assess that process are discussed.

In thinking about assessment questions, there is, of course, a substantial interaction between the length and complexity of the text and the sophistication of the comprehension processes required. Initially, it may seem that locating and extracting explicitly stated information would be less difficult than, for example, making interpretations across an entire text and integrating those with external ideas and experiences. However, all texts are not equal and can vary with regard to length, syntactic complexity, abstractness of ideas, and organizational structure. Thus, the nature of the text can impact the difficulty of the question asked, across and within the four types of comprehension processes.

Focus on and Retrieve Explicitly Stated Information

Readers vary the attention they give to explicitly stated information in the text (Flavell & Wellman, 1977; Schneider & Pressley, 1997). Some ideas in the text may elicit particular focus and others may not. For example, readers may focus on ideas that confirm or contradict predictions they have made about the text's meaning or that relate to their general purpose for reading. In

addition, readers often need to retrieve information explicitly stated in the text to answer a question they bring to the reading task, or to check their developing understanding of some aspect of the text's meaning.

In focusing on and retrieving explicitly stated information, readers use various ways to locate and understand content that is relevant to the question posed. Typically, this type of text processing requires the reader to focus on the text at the word, phrase, and sentence level in order to construct meaning (Perfetti, 2007; Perfetti & Adolf, 2012). The process also may require the reader to focus on and retrieve pieces of information from several locations.

Successful retrieval requires a fairly immediate or automatic understanding of the text (West & Stanovich, 2000). This process needs little or no inferring or interpreting—the meaning is evident and stated in the text. The reader must, however, recognize the relevance of the information or idea in relation to the information sought.

Reading tasks that may exemplify this type of text processing include the following:

- Identifying information that is relevant to the specific goal of reading;

- Looking for specific ideas;

- Searching for definitions of words or phrases;

- Identifying the setting of a story (e.g., time and place); and

- Finding the topic sentence or main idea (when explicitly stated).

Make Straightforward Inferences

As readers construct meaning from text, they make inferences about ideas or information not explicitly stated (Zwaan & Singer, 2003). Making inferences allows readers to move beyond the surface of texts and to resolve the gaps in meaning that often occur in texts. Some of these inferences are straightforward in that they are based primarily on information that is contained in the text—readers may merely need to connect two or more ideas or pieces of information. The ideas themselves may be explicitly stated, but the connection between them is not, and thus must be inferred. Furthermore, despite the inference not being explicitly stated in the text, the meaning of the text remains relatively clear.

Skilled readers often make these kinds of inferences automatically (West & Stanovich, 2000). They may immediately connect two or more pieces of information, recognizing a relationship even though it is not stated in the text.

In many cases, the author has constructed a text to lead readers to an obvious or straightforward inference. For example, the actions of a character across the story may clearly point to a particular character trait, and most readers would arrive at the same conclusion about that character's personality or viewpoint.

With this type of processing, readers typically focus on more than just word-, phrase-, or sentence-level meaning. While the focus may be on local meaning residing within one part of the text, the focus also may be on a more global meaning, representing the whole text. In addition, some straightforward inferences may require readers to connect local and global meanings.

Reading tasks that may exemplify this type of text processing include the following:

- Inferring that one event caused another event;

- Concluding what is the main point made by a series of arguments;

- Identifying generalizations made in the text; and

- Describing the relationship between two characters.

Interpret and Integrate Ideas and Information

As with the more straightforward inferences, readers who are engaged in interpreting and integrating ideas and information in text may focus on local or global meanings, or may relate details to overall themes and ideas. In any case, these readers are making sense of the author's intent and developing a more complete understanding of the entire text.

As readers interpret and integrate, they are attempting to construct a more specific or more complete understanding of the text by integrating personal knowledge and experience with meaning that resides within the text. For example, readers may draw on experience to infer a character's underlying motive or to construct a mental image of the information conveyed. They often need to draw on their understanding of the world, as well as their background knowledge and experiences, more than they do for straightforward inferences.

As readers engage in this interpretive process, they are making connections that are not only implicit, but that may be open to some interpretation based on their own perspective. Because of this, meaning that is constructed through interpreting and integrating ideas and information is likely to vary among readers, depending upon the experiences and knowledge they bring to the reading task.

Reading tasks that may exemplify this type of text processing include the following:

- Discerning the overall message or theme of a text;

- Considering an alternative to actions of characters;

- Comparing and contrasting text information;

- Inferring a story's mood or tone; and

- Interpreting a real-world application of text information.

Evaluate and Critique Content and Textual Elements

As readers evaluate the content and elements of a text, the focus shifts from constructing meaning to critically considering the text itself. Readers engaged in this process step back from a text in order to examine and critique it.

The text content, or meaning, may be evaluated and critiqued from a personal perspective or with an objective view. This process may require readers to make a justified judgment, drawing on their interpretations and weighing their understanding of the text against their understanding of the world—rejecting, accepting, or remaining neutral to the text's representation. For example, readers may counter or confirm claims made in the text or make comparisons with ideas and information found in other sources.

In evaluating and critiquing elements of text structure and language, readers draw upon their knowledge of language usage, presentational features, and general or genre-specific features of texts. The text is considered as a way to convey ideas, feelings, and information.

Readers may reflect on the author's language choices and devices for conveying meaning and judge their adequacy. Relying on their understanding of language conventions, readers may find weaknesses in how the text was written or recognize the successful use of the author's craft. Further, readers may evaluate the mode used to impart information—both visual and textual features—and explain their functions (e.g., text boxes, pictures, or tables). In evaluating the organization of a text, readers draw upon their knowledge of text genre and structure. The extent of past reading experience and familiarity with the language are essential to each piece of this process.

Reading tasks that may exemplify this type of text processing include the following:

- Judging the completeness or clarity of information in the text;

- Evaluating the likelihood that the events described could really happen;

- Evaluating how likely an author's argument would be to change what people think and do;

- Judging how well the title of the text reflects the main theme;

- Describing the effect of language features, such as metaphors or tone; and

- Determining an author's perspective on the central topic.

Introducing ePIRLS—An Assessment of Online Informational Reading

A new extension of PIRLS offered for the first time in 2016, ePIRLS is an innovative assessment of online reading that was developed in response to the explosion of information availability on the Internet. As previously described, ePIRLS is a computer-based assessment focusing on the informational reading purpose and designed to assess fourth grade students' ability to use the Internet in a school context.

Particularly relevant to the PIRLS assessment, Internet reading is increasingly becoming a key component of school curricula and one of the central ways students are acquiring information (Leu, Kinzer, Coiro, Castek, & Henry, 2013; Leu, O'Byrne, Zawilinski, McVerry, & Everett-Cacopardo, 2009; Murnane, Sawhill, & Snow, 2012; Pew Research Center, 2012; 2013a; 2013b; Rowsell, Kress, Pahl, & Street, 2013; Tondeur, van Braak, & Valcke, 2007). New digital literacies are necessary to be a successful reader on the Internet, where a successful reader is one that can meet his or her reading goals by efficiently finding and comprehending the target information (Afflerbach & Cho, 2009; Bawden, 2008; Coiro & Kennedy, 2011; Leu, Kinzer, Coiro, Castek, & Henry, 2013; Leu, Kulikowich, Sedansk, & Coiro, 2008).

Essentially, reading for informational purposes on the Internet requires all of the reading comprehension skills and strategies assessed by PIRLS, but in a different environment containing much more information. Because of the complexity of the Internet, online reading involves being able to use reading comprehension skills and strategies in contexts that are very different from those encountered in reading traditional printed materials as regularly assessed by PIRLS (Britt & Rouet, 2012; Leu, Kinzer, Coiro, Castek, & Henry, 2013).

ePIRLS focuses on the reading skills and strategies needed to derive meaning from the variety of differing presentations of online text. For example, Internet web pages appear different than typical printed pages. Although much of the Internet is devoted to providing information of one type or another, online presentations often use text sparingly. Similar to printed texts, web pages can present information in various forms, such as photos, illustrations, graphs, charts, tables, maps, and timelines. However, web pages also tend to be multi-modal in the ways they present information and contain interactive, experiential features that are not possible to reproduce in a print format. For example, online text presentations typically integrate the following dynamic elements for visual interest or illustration: videos and audio clips; animated graphics; pop-up windows with information that only appears by clicking, "hovering" above, or "rolling over" it; and a variety of code-based features, such as information that appears and disappears, revolves, or changes color.

The Internet also is a network of texts that are distributed across multiple websites and pages in a non-linear fashion. Looking for and learning information from the Internet involves comprehension of information arranged within this complex reading environment. While traditional printed text usually is read in a linear fashion, online reading consists of searching through a network of multiple texts where readers are responsible for creating their own paths. Readers first must access the appropriate website, and then use navigation strategies (e.g., multiple navigation and sub-navigation menus, tabs, and links) to move efficiently within and across one web page or site to the next.

A fundamental component of successful Internet research and comprehension, therefore, is the ability to locate information that meets one's needs. Readers need to be able to find and select the websites that will provide the target information, to navigate to the relevant web pages, and also to follow links to new websites. This may involve self-regulatory processes to maintain focus on the task at hand, so as not to be distracted by other interesting topics or advertising.

Further, Internet searches for information require the additional comprehension demands of inferring the potential usefulness of yet unseen texts (e.g., when evaluating search engine results or links). In order to begin the search for information, online readers must choose among websites to find the one most likely to contain the target information. Once on a given website or page, readers must continue to infer the relevance of the various types of information and texts presented, while ignoring a barrage of advertising.

ePIRLS—Assessing the PIRLS Comprehension Processes in the Context of Online Informational Reading

ePIRLS recognizes that online reading comprehension tasks require a blending of new digital literacies with traditional offline (i.e., print) reading comprehension processes as currently defined and assessed by PIRLS. Overall, the reading comprehension skills and strategies assessed in ePIRLS will parallel those assessed in PIRLS, with the distinction that the ePIRLS reading tasks are situated in a simulated Internet environment.

The goal of ePIRLS is to assess students' reading achievement when the notion of the PIRLS passages is greatly expanded to include a series of interconnected web pages with many different kinds of visual information, such as photos, graphs, charts, and maps, in addition to dynamic features such as videos, animations, links, and pop-up windows. The websites look very different from the typical PIRLS passages, and involve navigating between pages and sites.

The approach is based on using websites from the actual Internet as the basis for creating a closed Internet environment, through which fourth grade students can accomplish an online study of a science or social studies topic, similar to the types of projects or reports they might be asked to complete for school. Each task involves students working across approximately three different websites totaling about five to ten web pages, each containing a variety of textual presentations and visual displays, and including a variety of approaches to web navigation.

In its simulated environment, ePIRLS incorporates a set of navigation skills and strategies specifically required to locate and use information on the Internet. These include the following:

- Selecting websites that meet a particular information need; and

- Using online features to locate information within websites (e.g., content tabs, navigation bars, graphic icons, links, and scroll bars).

However, while ePIRLS is designed to simulate an authentic online reading experience, it is within a computer-based environment suitable to fourth grade reading levels and a timed assessment. In addition, although it is intended to reflect the types of online reading that students are asked to do as part of school-based projects, reports, and research assignments, the online

environment of the ePIRLS assessment is necessarily very limited in comparison to the entire world of the Internet.

While recognizing that being able to locate Internet information underlies all of the reading processes, the emphasis in ePIRLS is on assessing reading comprehension rather than navigation skills. Because students have a range of Internet experiences, ePIRLS begins with a brief set of directions that covers how to click on tabs and links as well as how to scroll, when necessary. Also, throughout the assessment, the teacher avatar points students toward particular websites and provides additional assistance when students have difficulty locating particular web pages. Students that have difficulty finding the correct web pages are automatically moved along to the pages by the teacher avatar after a certain amount of time, and this information is tracked by the ePIRLS computer-based assessment. Using the device of the teacher avatar, the ePIRLS assessment moves students through the web pages so that students have the opportunity to accomplish the reading tasks in the allotted assessment time.

Focus on and Retrieve Explicitly Stated Information

In reading a printed, linear text to retrieve specific information, the text is likely to be initially read and processed at a micro-level, focusing on individual phrases or sentences. In contrast, using online sources and search strategies can involve initial macro-processing. Readers need strategies for identifying the portion of the web page that contains the important information before they can focus on the sentence, phrase, or part of the graphic that has the information.

Online reading tasks that may exemplify this type of text processing include the following:

- Identifying the part of the web page that contains the information;

- Identifying the explicitly stated information related to a specific reading goal; and

- Identifying specific information on a graphic (e.g., graph, table, or map).

Make Straightforward Inferences

As explained previously, as readers construct meaning from text, they make inferences about ideas or information not explicitly stated. Online reading requires a considerable amount of inferencing, beginning with identifying those websites most likely to have the information of interest. Next, readers need

to process the information on a web page, making connections and inferring ideas or information not explicitly stated. Readers also may infer whether it is necessary or useful to follow a link to another page.

Online reading tasks that may exemplify this type of text processing include the following:

- Choosing among possible websites to identify the most appropriate, applicable, or useful one;

- Filtering the content of a web page for relevance to the topic;

- Summarizing the main intent of a web page;

- Describing the relationship between text and graphic(s); and

- Inferring the potential usefulness of links.

Interpret and Integrate Ideas and Information

Using the Internet requires the ability to read and digest information from multiple online sources. Integrating and synthesizing information across texts is very challenging, even offline, because readers need to comprehend not only one text, but consolidate information across two or more texts. In the Internet environment, this includes information presented via animation and videos as well as in pop-up windows and rollover text and graphics.

Online reading tasks that may exemplify this type of text processing include the following:

- Comparing and contrasting information presented within and across websites;

- Relating the information in one web page or site to information in another web page or site;

- Generalizing from information presented within and across web pages or sites;

- Relating details from different web pages to an overall theme; and

- Drawing conclusions from information presented in multiple websites.

Evaluate and Critique Content and Textual Elements

The skills required to evaluate and critique online texts in ePIRLS are very similar to those required for printed passages in PIRLS. However, because anyone can publish anything on the Internet, readers also must make judgments

about the credibility of the source of the information as well as determine the perspective, point of view, and bias in the text. In addition, the visual and textual features on the Internet tend to be much more varied.

Online reading tasks that may exemplify this type of text processing include the following:

- Critiquing the ease of finding information on a website;

- Evaluating how likely the information would be to change what people think;

- Describing the effect of the graphic elements on the website;

- Determining the point of view or bias of the website; and

- Judging the credibility of the information on the website.

Selecting PIRLS and PIRLS Literacy Passages and ePIRLS Online Texts

The PIRLS and PIRLS Literacy reading passages, as well as the ePIRLS online reading texts, undergo extensive review by the Reading Development Group and the National Research Coordinators. Considerable effort is expended to ensure that the texts have the following characteristics:

- Clarity and coherence;

- Appropriate content across countries and cultures;

- Interesting, engaging content for a wide range of students; and

- Adequate basis for assessing the full range of comprehension processes.

In order to reflect the goal of approximating an authentic reading experience in the assessment, the reading passages and online materials presented to students must be typical of those read by students in their everyday experiences and reflect students' authentic reading experiences, in and outside of school. In order to help achieve this goal, the texts are provided by the participating countries as representative of the literary and informational materials their students read. Texts that exist for students to read in and outside of school are more likely to reflect students' ongoing reading activities and challenges than those written specifically for a test.

The time constraints of the test situation place some limits on the length of texts, because students need time to read the entire passage and answer comprehension questions. Consistent with the difference in difficulty between

PIRLS and PIRLS Literacy, the passages for PIRLS generally average about 800 words and those for PIRLS Literacy about 400 words. However, length will vary somewhat because other text characteristics also affect rate of reading.

As an additional feature to help students locate information within the text, items in the PIRLS Literacy booklets are interspersed throughout each passage. When possible, items that require students to focus on a particular page of text are placed on the facing page, so that students can view both the items and the relevant text simultaneously. This distribution of items also helps to ensure that students can provide answers to some questions, even if they do not complete the entire passage.

The ePIRLS online informational reading tasks in science or social studies are adapted from Internet websites. As described previously, each task involves approximately three different websites totaling about five to ten web pages. Reflecting the fact that online reading often involves sorting through more information than is actually necessary to achieve one's goal, the texts contained in an ePIRLS assessment task average about 1000 words in total.

Clarity and coherence are essential criteria for PIRLS texts. Typically, the passages and websites have been written by successful authors who understand writing for a young audience, such that the texts have an appropriate level of linguistic features and density of information. In the context of an international study, attaining authenticity in assessment reading experience may be somewhat constrained by the need to translate the texts into numerous languages. Thus, care is taken to choose texts that can be translated without loss of clarity in meaning, or in potential for student engagement.

In selecting texts for use in international reading assessment, it is crucial to pay close attention to the potential for cultural bias. Texts that depend heavily on culture-specific knowledge are automatically excluded. Text selection thus involves collecting and considering texts from as many of the participating countries as possible. The goal is for the texts to be universally applicable across cultures, and for the set of texts in the assessment to range as widely as possible across nations and cultures, such that no country or culture is overrepresented in the assessment texts. The final selection of texts is based, in part, on the national and cultural representation of the entire set of assessment texts.

The appropriateness and readability of texts for the PIRLS assessments primarily is determined through iterative reviews by educators and curriculum specialists from countries participating in the assessments. Taking into account fairness and sensitivity to gender, racial, ethnic, and religious considerations,

every effort is made to select texts that are topic and theme appropriate for the grade level and that elicit the full range of comprehension processes.

Finally, it is extremely important for the texts to be interesting to the greatest number of students. As part of the field test, students routinely are asked how well they like each of the texts, and a high level of positive response is fundamental for a text to be selected for PIRLS.