

Overview of PISA

The Programme for International Student Assessment (PISA) is a project initiated and coordinated by the Organisation of Economic Co-operation and Development (OECD). The primary goal of this international study is to assess how well youths at age 15, near the completion of compulsory education, have acquired the knowledge and skills essential for meeting the challenges of our society. It then develops educational indicators to help governmental bodies and policy makers examine, evaluate, and monitor the effectiveness of the educational system at both national and school levels.

For more information, please contact

Prof. Esther Sui-Chu HO, Centre Director

Telephone #: (852) 2609 6918

E-mail: estherho@cuhk.edu.hk

HKPISA Centre

Telephone #: (852) 2603 7209

Fax #: (852) 2603 5336

E-mail: hkpisa@fed.cuhk.edu.hk

Website: <http://www.fed.cuhk.edu.hk/~hkpisa>

Address: Rm 612, Sino Building, The Chinese University of Hong Kong
Shatin, N.T., Hong Kong

For more information about OECD/PISA,

please visit the website: <http://www.pisa.oecd.org>

May 2010

The Assessment of Reading Literacy Learning from PISA



學生能力國際評估計劃—香港中心

Hong Kong Centre for International Student Assessment

香港中文大學 *The Chinese University of Hong Kong*



教育學院
Faculty of Education

香港教育研究所
Hong Kong Institute of Educational Research

PISA Assessment Framework and Pedagogical Practice Series

Since 2000, the Hong Kong Centre for International Student Assessment (HKPISA Centre) had conducted four cycles of the OECD Programme for International Student Assessment (PISA). Three major domains of literacy are assessed in PISA: reading, mathematics and science, as well as the literacy of problem solving which was assessed in PISA 2003.

While the PISA assessment frameworks are constructed by international experts based on sound theories, the test items are developed following the framework closely. The PISA frameworks and test items would be valuable references for teachers. It is hoped that through publishing the *PISA Assessment Framework and Pedagogical Practice Series*, together with the associated series of teacher professional development programmes, teachers will have a better understanding of the 'what' (i.e. the elements and structure of instructional content) and 'how' (i.e. theory informed, technique of design) of assessment as exemplified in PISA. Teachers will also learn how to evaluate students' learning effectively base on the assessment results.

The current series is prepared particularly for teachers of Chinese/English languages, Mathematics, Science and Liberal Studies. It is hoped that, through engaging in our professional development activities, teachers will develop their repertoire of assessment. We encourage professional sharing among teachers. Therefore, teachers participated in our programmes are welcomed to share their works and insights by posting comments and constructed items onto HKPISA Centre's website.

Esther Sui-Chu HO

Esther Sui-Chu HO

Professor

Department of Educational Administration and Policy

Director, HKPISA Centre

Hong Kong Institute of Educational Research

The Chinese University of Hong Kong

The Assessment of Reading Literacy: Learning from PISA

Introduction

Literacy is considered as an expending set of knowledge, skills and strategies which individuals build on through life in various situations and through interaction with their peers and with the larger community in which they participate. This guide makes use of the Organisation for Economic Development / Programme for International Student Assessment (OECD/PISA) assessment framework and results to explore the theoretical concept behind reading literacy. The definition of reading literacy and components of the reading process will first be discussed. Subsequently, the performance of Hong Kong students in reading literacy in PISA 2000+ will be presented.

- 1 Definition of Reading Literacy
- 2 Reading Process
 - 2.1 Text Format
 - 2.2 Situations
 - 2.3 Processes (Aspects)
- 3 Levels of Reading Literacy Proficiency
- 4 Performance of Hong Kong Students in Reading Literacy
- 5 Performance of Hong Kong Students on Individual Reading Items

1 Definition of Reading Literacy

In PISA, reading literacy is defined as “understanding, using, reflecting on written texts, in order to achieve one’s goals, to develop one’s knowledge and potential, and to participate in society”¹. This definition spells out the idea of “reading to learn”, the active and interactive role of the reader in understanding. Readers draw on their own thoughts and experiences in engaging with written information for a variety of purposes. It also recognises that literacy promotes the fulfilment of aspirations and provides a set of linguistics tools that are essential for meeting the demands of modern societies.

2 Reading Process

As readers seek to use and understanding a given text, they undergo a dynamic process that involves a number of factors. Three of these factors are used to construct the PISA assessment:

- **Content - types of text:** the form in which material is encountered and needs to be understood (many and varied forms such as narrative prose, or graphic presentation), a wide selection of which is represented in the PISA assessment tasks.
- **Context:** the situation in which reading takes place (e.g.

for private or occupational use), defined in PISA according to how the author intended the text to be used. PISA tasks are designed to relate to a variety of such contexts.

- **Processes:** the various reading tasks required of readers (such as retrieval of information or interpretation of text) used in PISA to simulate the tasks students encounter in real life.

2.1 Text Format

In an assessment, a text (or a set of texts) related to a particular task must be coherent within itself. In other words, the text must be able to stand alone without requiring additional material to make sense to a proficient reader.

The distinction between continuous and non-continuous text is central to the PISA assessment.

- **Continuous texts** are typically composed of sentences that are, in turn, organised into paragraphs that may fit into even larger structures such as sections, chapters and books. The primary classification of continuous texts is by rhetorical purpose, that is, by text type:
- **Narration** is a type of text in which the information refers to properties of objects in time. Narrative texts typically provide answers to “when”, or “in what sequence” questions.

¹ OECD (2006). *PISA assessing scientific, reading and mathematical literacy, a framework for PISA 2006*. Paris: OECD.

- **Exposition** is a type of text in which the information is presented as composite concepts or mental constructs. Expository text provides an explanation of how the component elements interrelate in a meaningful whole and answers to "how" questions.
- **Description** is a type of text in which the information refers to properties of objects in space. Descriptive texts typically provide answers to "what" questions.
- **Argumentation** is a type of text that presents propositions as to the relationship between concepts. Argumentative texts often provide answers to "why" questions. Another important sub-classification of argumentative texts is persuasive texts.
- **Instruction** (or injunction) is a type of text that provides directions on what to do and include procedures, rules, regulations and statutes specifying certain behaviors.
- **Documents or records** are texts designed to standardize and conserve information. They can be characterised by highly formalised textual and formatting features.
- **Hypertext** is a set of text slots linked together in such a way that the units can be read in different sequences, allowing readers to follow various

routes to the information.

- **Non-continuous texts** are organised differently from continuous texts and so require different kinds of reading approaches. Non-continuous texts are classified by everyday descriptions of the formats of these texts in the PISA assessment.
 - **Charts and graphs** are iconic representations of data. They are used for the purposes of scientific argumentation, and also in journals and newspapers to display numerical and tabular public information in a visual format.
 - **Tables** are row and column matrices. Common tables include schedules, spreadsheets, order forms and indexes.
 - **Diagrams** often accompany technical descriptions, expository texts and instructive texts. It is often useful to distinguish procedural (how to) from process (how something works) diagrams.
 - **Maps** indicate the geographical relationships between places.
 - **Forms** are structured and formatted texts which request the reader to respond to specific ways.
 - **Information sheets** summarise information in a structured way so that the reader can easily and quickly locate specific pieces of information.
 - **Calls and advertisements** are documents designed

to invite the reader to do something, e.g. to buy goods or service. The purpose of the document is to persuade the reader.

- **Vouchers** testify that their owner is entitled to certain services.
- **Certificates** are written acknowledgements of the validity of an agreement or a contract. They require the signature of one or more persons authorised and competent to bear testimony of the truth of the given statement.

2.2 Situation

In PISA, texts are categorized into four situation variables based on the author's intended use, on the relationship with other persons implicitly or explicitly associated with the text, and on the general content.

- **Reading for personal use:** This type of reading is carried out to satisfy an individual's own interests, both practical and intellectual.
- **Reading for public use:** This type of reading is carried out to participate in the activities of the wider society.
- **Reading for work (occupational):** This type of reading is referred to as "reading to do" in that they are tied to the accomplishment of some immediate task.

- **Reading for education:** This type of reading involves the acquisition of information as part of a larger learning task. It is referred to as "reading to learn" tasks.

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).

2.3 Processes (Aspects)

Aspects are the mental strategies, approaches or purposes that readers use to negotiate their way into, around and between texts. Full understanding of texts involves proficiency in all of the following five aspects:

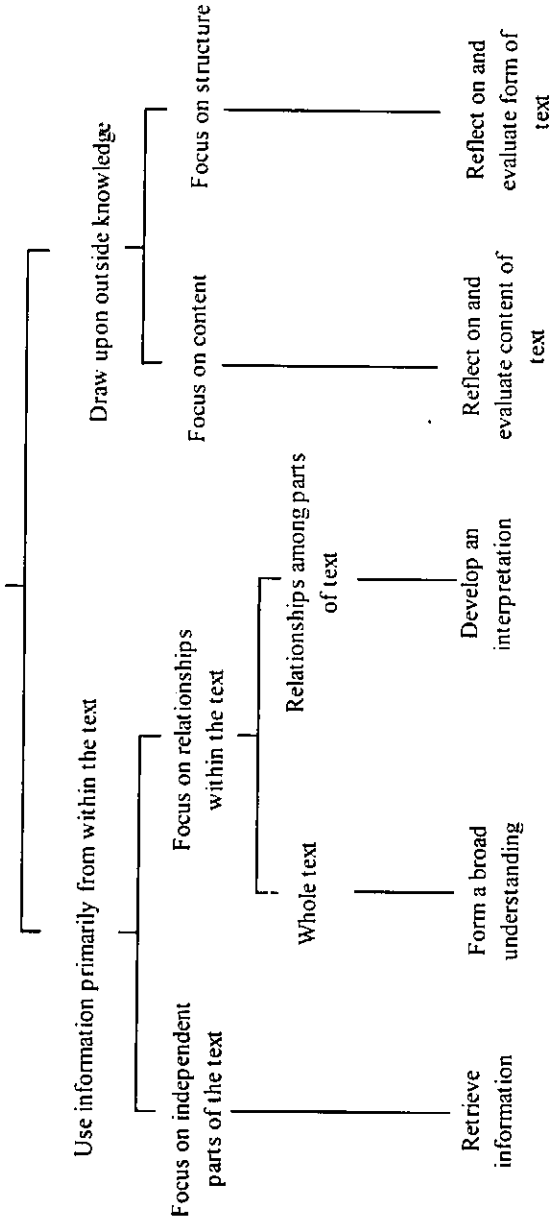
- Retrieving information
- Forming a broad understanding
- Developing an interpretation
- Reflecting on and evaluating the content of a text
- Reflecting on and evaluating the form of a text

All readers, irrespective of their overall proficiency, should be able to demonstrate some level of competency in each aspect. While there is an interrelationship between the five aspects, since each may require many of the same

underlying skills, successfully accomplishing one may not be dependent upon successfully completing another.

Figure 2.3.1 identifies the key distinguishing characteristics of the five processes of reading measured in PISA. As depicted in the figure, the five processes can be distinguished in terms of four characteristics. The first deals with the extent to which the reader is expected to use information primarily from within the text or to draw also upon outside knowledge. A second characteristic involves the extent to which the reader is asked to focus on independent parts of the text or on the relationships within the information contained in the text. Focusing on the whole text or on relationships among parts of the text is the third distinguishing characteristic. The fourth characteristic relates to whether the reader is asked to deal with the content or substance of the text rather than its form or structure. The five processes of reading are represented at the ends of the various branches in Figure 2.3.1. By starting at the top of the figure and following each branch one can see which characteristics are associated with each process.

Figure 2.3.1 Characteristics distinguishing the five processes of reading literacy



Retrieving Information

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 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. The different levels of proficiency associated with this process of comprehension can be measured by systematically varying the elements that contribute to the difficulty of the task.

Forming a Broad Understanding

To form a broad general understanding of what has been read, a reader must consider the text as a whole or in a broad perspective. There are various assessment tasks in which readers are asked to form a broad general understanding. 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 thesis for the text, to explain the order of simple instructions, or to identify the main dimensions of a graph or a table. Others include tasks that require the student to describe the main character, setting or milieu of a story, to identify a theme or message of a literary text, or to explain the purpose or use of a map or a figure.

Developing an Interpretation

Tasks in this category require readers to extend their initial impressions so that they develop a more specific or complete understanding of what they have read. Tasks in this category call for logical understanding; readers must process the organisation of information in the text. Examples of tasks that might be used to assess this process include comparing and contrasting information, drawing inferences, 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. 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.

Reflecting on and Evaluating the Content of a Text

Tasks in this category require the reader to connect information in a text to knowledge from other 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. Assessment tasks representative of 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 outside knowledge to which textual information is to be connected may come from the student's own knowledge, from other texts provided in the assessment, or from ideas explicitly provided in the question.

Reflecting on and Evaluating the Form of a Text

Tasks in this category require readers to stand apart from the text, consider it objectively and evaluate its quality and appropriateness. Knowledge of such things as text structure, genre 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 nuances in language - for example,

understanding when the choice of an adjective might colour interpretation. Some examples of assessment tasks include determining the utility 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.

In the PISA assessment, tasks of the five reading processes are grouped into three broad aspect categories:

- **Retrieving information** involve tasks that require students to locate one or more pieces of information in a text.
- **Interpreting texts** involve tasks that require students either to form a broad understanding or to develop an interpretation.
- **Reflection and evaluation** involve tasks that require students to reflect on and evaluating either the content or the form of a text.

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 it can be argued that they are semi-hierarchical: one cannot interpret or integrate information without having first retrieved it, and one cannot reflect on or evaluate information without having made some sort of interpretation of it.