The Major International and National Assessments

PIRLS - Progress in International Reading Literacy Study

PIRLS is the Progress in International Reading Literacy Study. The objective of the PIRLS is to study the trends in reading achievement in fourth graders from 35 different countries. PIRLS is a study conducted by the International Association for the Evaluation of Educational Achievement (IEA). "It is designed to measure children's reading literacy achievement, to provide a baseline for future studies of trends in achievement, and to gather information about children's home and school experiences in learning to read."

PIRLS is one of the largest international collections of reading literacy. Studies of reading literacy had been conducted prior to the study of 2001. PIRLS is the successor to the IEA studies that started in 1970 and continued to 1991 with the Reading Literacy Study. The study of 2001 started the trend for the PIRLS cyclical testing. They plan on testing every five years. By administering the test every five years, it allows countries to monitor their children's literacy achievement. Also in 2001, background information about the students and schools were collected.
The reading achievement results present each country with an opportunity to examine educational policies and practices against a globally-defined benchmark, while the report also contains rich information about children's early literacy experiences and reading instruction.

The PIRLS study consists of a main survey that consists of a written reading comprehension test and a background questionnaire. The PIRLS Reading Development Group (RDG) and National Research Coordinators (NRCs) from the 35 countries collaborate to develop the reading assessments. The assessment focuses on three main areas of literacy: process of comprehension, purposes for reading, and reading behaviors and attitudes. The background questionnaire is used to determine the reading behaviors and attitudes. The written test is designed to address the process of comprehension and the purposes for reading. There are two purposes for reading that are examined in this study: reading for literary experience and reading to acquire and use information. Each student receives 80 minutes to complete two passages and then time to complete the survey. There are a total of 8 passage. Four passages are for each purpose of reading. With eight reading passages in total, but just two to be given to any one student, passages and their accompanying items were assigned to student test booklets according to a matrix sampling plan. The eight passages were distributed across 10 booklets, two per booklet, so that passages were paired together in a booklet in as many different ways as possible.

TIMMS - Trends in International Mathematics and Science Study

- an international assessment of the mathematics and science knowledge of fourth- and eighth-grade (Year 5 and Year 9) students around the world. TIMSS was developed by the International Association for the Evaluation of Educational Achievement (IEA) to allow participating nations to compare students' educational achievement across borders. The IEA also conducts PIRLS.

TIMSS was first administered in 1995, and every 4 years thereafter. In 1995, forty-one nations participated in the study; in 2007, 48 countries participated. .

TIMSS was created through an extensive collaboration among participating countries. Curriculum, measurement, and education experts from around the world worked together to create the assessment frameworks, item pools, and questionnaires. TIMSS is based on the curricula of schools around the world, and is organized to investigate how students are provided educational opportunities, and the factors that influence how students make use of these opportunities. Having its basis in the curricula of schools around the world, TIMSS intends to investigate three levels: the intended curriculum; the implemented curriculum; and the achieved curriculum.

The intended curriculum is defined as the mathematics and science that societies intend for students to learn and how education systems are organized to meet this demand; the implemented curriculum is what is actually taught in classrooms, who teaches it, and how it is taught; the achieved curriculum is what students have learned. The various questionnaires seek information on the intended and implemented curriculum; the assessment seeks to ascertain what students know.

PISA - Programme for International Student Assessment

- a worldwide evaluation of 15-year-old school pupils' scholastic performance, performed first in 2000 and repeated every three years. It is coordinated by the Organisation for Economic Co-operation and Development (OECD), with a view to improving educational policies and outcomes. Another similar study is the Trends in International Mathematics and Science Study, which focuses on mathematics and science but not reading.

PISA stands in a tradition of international school studies, undertaken since the late 1950s by the International Association for the Evaluation of Educational Achievement (IEA). Much of PISA's methodology follows the example of the Trends in International Mathematics and Science Study (TIMSS, started in 1995), which in turn was much influenced by the U.S. National Assessment of Educational Progress (NAEP). The reading component of PISA is inspired by the IEA's Progress in International Reading Literacy Study (PIRLS).

PISA aims at testing literacy in three competence fields: reading, mathematics, science.

The PISA mathematics literacy test asks students to apply their mathematical knowledge to solve problems set in various real-world contexts. To solve the problems students must activate a number of mathematical competencies as well as a broad range of mathematical content knowledge. TIMSS, on the other hand, measures more traditional classroom content such as an understanding of fractions and decimals and the relationship between them (curriculum attainment). PISA claims to measure education's application to real-life problems and life-long learning (workforce knowledge).

In the reading test, "OECD/PISA does not measure the extent to which 15-year-old students are fluent readers or how competent they are at word recognition tasks or spelling". Instead, they

should be able to "construct, extend and reflect on the meaning of what they have read across a wide range of continuous and non-continuous texts.

NAEP - **National Assessment of Educational Progress**

- a periodic assessment of student progress conducted in the United States by the National Center for Education Statistics, a division of the U.S. Department of Education. The assessment covers the areas of mathematics, reading, writing, science, and more.[1] Assessments in world history and in foreign language are anticipated in 2018.[2] NAEP results, released as "The Nation's Report Card", are used by policymakers, state and local educators, principals, teachers, and parents to inform educational administration.

The NAEP assessment is conducted on representative samples of students at grades 4, 8, and 12 for the main assessments, and on samples of students at ages 9, 13, and 17 years for long-term trend assessments. These grades and ages were chosen because they represent critical junctures in academic achievement. NAEP provides data on subject-matter achievement, instructional experiences, and school environment for populations of students (e.g., all fourth-graders) and groups within those populations (e.g., female students, Hispanic students). NAEP does not provide scores for individual students or schools, although state NAEP can report results for selected large urban districts.

Since NAEP assessments are administered uniformly to all participating students using the same test booklets and identical procedures across the nation, NAEP results serve as a common metric for states and selected urban districts that participate in the assessment. The assessment stays essentially the same from year to year, with only carefully documented changes. NAEP reports results at the national level and provides state results for some assessments. On a trial basis, NAEP has released the results for a number of large urban districts.

There are two NAEP websites – one on the NCES website and one website especially for The Nation's Report Card. The first site details NAEP as a program, while the second focuses on the individual releases of data.

Main NAEP reports statistical information about student performance and factors related to educational performance for the nation and for specific student groups in the population (e.g. race/ethnicity, gender). It includes students drawn from both public and nonpublic (private) schools and reports results for student achievement at grades 4, 8, and 12. All NAEP assessments report results at the national level, while four major subjects – reading, mathematics, writing, and science – may be reported at the state level.

These assessments follow subject-area frameworks that are developed by the National Assessment Governing Board (NAGB) and use the latest advances in assessment methodology.

The existence of two national assessment programs — long-term trend NAEP and main NAEP — makes it possible to meet two objectives: 1) measure student progress over time, and 2) as educational priorities change, develop new assessment instruments that reflect current educational content and assessment methodology.

Table 1. The Three Major International Assessments

	PISA	TIMSS	PIRLS
Sponsor	Organisation for Economic Co-Operation and Development	International Association for the Evaluation of Educational Achievement	International Association for the Evaluation of Educational Achievement
Grades or ages tested	15-year-olds	Fourth and eighth graders	Fourth graders
Subjects tested	Math, science, and reading every three years; special problem solving assessment in 2003	Math and science	Reading
Content tested	Ability to apply math, science, and reading to solve real-world problems	Attainment of knowledge and skills in math and science curriculum	Reading comprehension skills
Testing cycle	Every 3 years	Every 4 years	Every 5 years
Last administration	2006	2007	2006
Next administration	2009	2011	2011
Cost for state participation	2009: $250,000 to $550,000 depending on level of participation	2007: $600,000 for full participation including *both* 4th and 8th grades, or $350,000 for a full sample in just one grade 2011: To be determined	2011: To be determined
Type of test questions	About two-thirds constructed response and one-third multiple choice	About one-third constructed response and two-thirds multiple choice	About one-half constructed response and one-half multiple choice
Sub-topics for which scores are reported	**Math (2003):** Quantity; space and shape; change and relationships; uncertainty **Science (2006):** Overall knowledge; knowledge about earth and space; knowledge about living systems; knowledge about physical systems; identifying scientific issues; explaining phenomena scientifically; using scientific evidence **Reading (2000):** Retrieving information; interpreting texts; reflection and evaluation	**Math:** Grade 4–Number; patterns and relationships; measurement; geometry; data. Grade 8–Number; algebra; measurement; geometry; data **Science:** Grade 4–Life science; physical science; earth science. Grade 8–Life science; chemistry; physics; earth science; environmental science	Reading for literary purposes; reading for informational purposes; retrieving and straightforward inferencing; interpreting, integrating, and evaluating
Technical alignment with NAEP: Can scores be equated to NAEP?	Little alignment; not enough to crosswalk scales and scores	Significant alignment; enough for some researchers to crosswalk scales and scores*	Unknown
Nations participating	*Please refer to Appendix A for a complete list of countries participating in each.*		

* See for example Phillips, G. W. (2007). *Chance Favors the Prepared Mind: Mathematics and Science Indicators for Comparing States and Nations.* Washington, DC: American Institutes for Research.