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National and International Educational Assessments

Assessing the academic achievement of students in elementary and secondary schools and the nation's overall educational progress is fundamental to informing education policy approaches. Congressional interest in this area includes and extends beyond the annual assessments administered by states to comply with the educational accountability requirements of Title I-A of the Elementary and Secondary Education Act (ESEA). Congressional interest in testing also encompasses large-scale national assessments, authorized by the National Assessment of Educational Progress Assessment Act (NAEPAA; P.L. 107-279, Title III), and international assessments, authorized by the Education Sciences Reform Act (ESRA; Title I, Section 153(a)(6) of P.L. 107-279). These assessments include the National Assessment of Educational Progress (NAEP), Trends in International Mathematics and Science Study (TIMSS), Progress in International Reading Literacy Study (PIRLS), and the Program for International Student Achievement (PISA).

These national and international assessments are typically administered every two to five years to a sample of students in the United States. Results from national and international assessments aim to highlight achievement gaps, track educational progress over time, compare student achievement within the United States, and compare U.S. achievement to that of other countries. None of the aforementioned assessments, however, provide data on individual student performance.

This In Focus provides an overview of all four assessment programs, describes the major distinctions between them, and provides a brief discussion of considerations when comparing results across the assessments.

NAEP

The NAEP is referred to as the “Nation’s Report Card” because it is the “largest nationally representative and continuing assessment of what America’s students know and can do in various subject areas.” The NAEP consists of two assessment programs—the long-term trends (LTT) NAEP, and a group of assessments that the National Center for Education Statistics at the U.S. Department of Education (ED) refers to as the “main NAEP” assessments. Student participation in all NAEP assessments is voluntary.

The LTT NAEP assessment program was developed in the late 1960s, and has remained relatively unchanged. The LTT NAEP program assesses 9-, 13-, and 17-year-old students in reading and mathematics and was most recently administered in 2012. In that year, approximately 53,000 9-, 13-, and 17-year-old students participated in the program. While previously administered about every four years, the next LTT NAEP administration is scheduled for 2024.

The main NAEP assessment has tracked student achievement since the early 1990s and changes periodically to reflect changes in school curricula and practice. It currently assesses students in 4th and 8th grade every two years within the content areas of reading, mathematics, science, writing, the arts, civics, economics, geography, U.S. history, and technology and engineering literacy (TEL). The main NAEP also assesses 12th graders, though less frequently. All content areas are not assessed at every administration of the main NAEP. Reading and mathematics, however, are assessed at two-year intervals. The next mathematics and reading assessment is scheduled for 2019. As part of its research in exploring new testing methods, the NAEP administered the reading, mathematics, and writing assessments digitally in 2017. Additional subjects will be administered digitally in future years.

The Commissioner of NCES in ED is responsible for the administration of the NAEP. The Secretary of Education appoints members to the independent National Assessment Governing Board (NAGB) to set the policy for NAEP administration. The Commissioner of NCES and the NAGB meet regularly to coordinate activities.

The main NAEP assessment program has three levels of assessment: national, state, and the trial urban district assessment (TUDA). Assessment items across the national, state, and TUDA levels are the same. The primary differences are the subject areas assessed, participation requirement, and sampling procedures at each level.

The national NAEP assesses the widest range of subject areas. A sample is selected from public and private schools and students, creating a representative sample across the nation.

The state NAEP program assesses four subject areas: reading, mathematics, writing, and science. All states that accept funding under Title I-A of the ESEA are required to participate in the biennial assessments of 4th and 8th grade reading and mathematics, provided that the Secretary of Education pays for the testing. Although states receiving funding are required to participate, only a sample of public schools and students are selected, creating a representative sample of students within each state. Participation is voluntary at the individual level. In 2017, approximately 585,000 4th and 8th grade students participated in the reading and mathematics assessments (national and state NAEP sample).

The TUDA program assesses four subject areas: reading, mathematics, writing, and science. Like the state NAEP, only a sample of public schools and students are selected to participate. In 2017, 27 districts voluntarily participated in the TUDA. A total of 66,500 students participated in the

mathematics assessment and 65,300 students participated in the reading assessment.

TIMSS

The TIMSS is an international comparative study that is designed to measure mathematics and science achievement in the 4th and 8th grades. The TIMSS is designed to measure “school-based learning,” and to be broadly aligned with mathematics and science curricula in participating education systems (i.e., countries). The United States has participated in the TIMSS every four years since 1995. Less frequently, 12th grade students participate in the TIMSS Advanced program, which measures advanced mathematics and physics. In 2015, approximately 20,250 U.S. students participated in TIMSS and about 5,900 U.S. students participated in TIMSS Advanced. The United States was one of over 60 countries and other educational systems to participate in TIMSS and one of 9 to participate in the TIMSS Advanced program. All participation in TIMSS is voluntary. The next TIMSS administration is scheduled for 2019. No date has been announced for the next TIMSS Advanced administration.

The TIMSS is conducted in the United States under the international assessment activities authority (ESRA, Section 153(a)(6)). TIMSS assessments in the United States are administered by the Commissioner of NCES within the International Activities Program. The International Association for the Evaluation of Educational Achievement (IEA) coordinates TIMSS and TIMSS Advanced internationally.

PIRLS

PIRLS is an international comparative study of 4th grade students in reading literacy. PIRLS assesses reading literacy in 4th grade because this is typically considered a developmental stage of learning where students shift from learning to read to reading to learn. PIRLS is not an assessment of word reading ability but rather an assessment of the purposes for reading, processes of comprehension, and reading behaviors and attitudes. For young students, reading generally has two purposes both in and out of school: “(1) reading for literary experience, and (2) reading to acquire and use information.”

The United States has participated in PIRLS every five years since 2001. The next assessment is scheduled to be administered in 2021. In 2016, the United States also participated in the first administration of ePIRLS, a computer-based assessment of online reading. ePIRLS is designed to measure informational reading comprehension skills in an online environment. In 2016, approximately 4,500 U.S. students participated in PIRLS and an additional 4,000 participated in ePIRLS. The United States was one of 61 educational systems to participate in PIRLS and one of 14 to participate in ePIRLS. All participation in PIRLS and ePIRLS is voluntary.

PIRLS is conducted in the United States under the international assessment activities authority (ESRA, Section 153(a)(6)). The PIRLS and ePIRLS assessments in the United States are administered by the Commissioner of

NCES within the International Activities Program. Like TIMSS, the IEA coordinates PIRLS internationally.

PISA

PISA is an international comparative study of 15-year-old students in the content areas of science, reading, and mathematics “literacy.” It aims to measure the achievement of students at the end of their compulsory education. The PISA is not designed to measure “school-based learning” or to be aligned with academic content standards. Instead, PISA intends to measure students’ preparation for life and focuses on science, reading, and mathematics problems within a real-life context. The United States has participated in PISA every three years since 2000. In 2015, approximately 6,000 U.S. students participated in PISA. The United States was one of 72 countries and economies to participate. All participation in PISA is voluntary. The next administration of PISA is scheduled for 2018.

PISA is conducted under the international assessment activities authority (ESRA, Section 153(a)(6)). The PISA assessment in the United States is administered by the Commissioner of NCES within the International Activities Program. Unlike TIMSS and PIRLS, international coordination of the PISA is conducted by the Organisation for Economic Co-operation and Development (OECD), an intergovernmental organization of industrialized countries.

Considerations for Comparing Results

Comparing results across national and international assessments can be challenging. Each assessment was created for a unique purpose by a different group of stakeholders, and there is no simple way to make an “apples to apples” comparison. There are a number of issues to bear in mind when evaluating U.S. students’ performance across assessments. For example, consideration must be given to the alignment between academic content standards and assessments, the differences in the target population (e.g., composition of sample of participants, age, ethnicity, socioeconomic status, etc.), the differences in participating education systems (e.g., countries and jurisdictions), differences in student voluntary participation, the scale of the assessment, and differences in the precision of measurement for each assessment.

For a more in-depth discussion about the NAEP, TIMSS, PIRLS, and PISA assessments and their results, see CRS Report R45401, *National and International Educational Assessments: Overview, Results, and Issues*. Additional resources for more information about the assessments are also included below.

Resources for More Information

NAEP: <https://nces.ed.gov/nationsreportcard/>

TIMSS: <https://nces.ed.gov/timss/>

PIRLS: <https://nces.ed.gov/surveys/pirls/>

PISA: <https://nces.ed.gov/surveys/pisa/>

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