Expert: High performing nations may inform policy decisions

The recent release of the 2012 Programme for International Student Assessment results revealed that a small percentage of U.S. students reached the top performance levels in reading, math, and science in comparison with their international counterparts in Asian countries such as Shanghai and Singapore.

What's more, some countries made considerable progress at the lower levels of achievement, thereby narrowing the gaps between low and high performers. Also seeing strong results were countries that have invested in education reforms in recent years, according to the findings.

However, overall U.S. student performance remained flat from the previous administration of the test in 2009, which troubled American education leaders.

Using the information collected from this latest PISA, some groups hope to learn which policies and practices in other countries and economies with larger numbers of high performing students are associated with their ability to equip students with college and career readiness skills.

In that spirit, the Alliance for Excellent Education examines the results and related data in its latest report, *The Deepest Learners: What PISA Can Reveal About the Learning That Matters* .

"Unlike many tests, including other international assessments, PISA was designed from the outset explicitly to measure many deeper learning competencies," wrote Robert Rothman, a senior fellow at the Alliance for Excellent Education and the author of the report.

Top performers

PISA scores are reported in two ways: performance levels and scale scores, which are similar to those used on the National Assessment of Educational Progress . For the purposes of their analysis, the Alliance focused primarily on the performance level outcomes.

The PISA exam offers descriptions of student knowledge and skills at the top performance levels that would suggest that the highest performers can demonstrate deeper learning competencies -- an ability to work "strategically using broad, well-developed thinking and reasoning skills" -- which have been associated with educational, career and health outcomes for adults and linked to the nation's global competitiveness, the report said.

For example, at level 5, which indicates students are top-performers:
• In mathematics, a student can "develop and work with models for complex situations, identifying constraints and specifying assumptions."
• In reading, a student can undertake "reflective tasks" and retrieve information by locating and organizing "several pieces of deeply embedded information" to infer which information of the text is relevant.
• In science, a student can "can identify the scientific components of many complex life situations, apply both scientific concepts and knowledge about science to these situations, and can compare, select and evaluate appropriate scientific evidence for responding to life situations."

In almost all 65 countries and economies participating in PISA, only a small percentage of students in 2012 reached the top levels and demonstrated deeper learning competencies, but there were wide variations among the nations, the report noted.

For instance, in Shanghai-China, 56 percent of students were top performers in at least one subject area, and 19.6 percent were top performers in all three, it said.

Similarly, there were variations of percentages of top performers among the industrialized nations in the OECD.

In Finland, for example, 24 percent were top performers in at least one subject and 7.4 percent were top performers in all three; in Japan, 30 percent were top performers in at least one subject and 11.3 percent in all three; and in Canada, 21.9 percent were top performers in at least one subject and 6.5 percent in all three. In the U.S., 12 percent of students were top performers in at least one subject and 4.7 percent were top performers in all three, the results showed.

Shifting to deeper learning

"The results from the 2012 PISA show that some countries enable large numbers of students to develop those competencies, while in other countries, such as the U.S., far fewer do so," wrote Rothman.

He said existing research and the PISA data suggest some implications for policy and practice in the U.S., but he also noted that PISA serves as only a snapshot of a nation's performance and it doesn't measure all of the abilities students should demonstrate.

Therefore, "the idea isn't that we can take these practices and import them wholesale to the United States, [but to] adopt what seems to be successful to the United States context," Rothman said in a recent webinar.

The Deepest Learners offered recommendations based on practices in high-performing countries. Each of which focused on ensuring standards, assessments, teacher preparation and professional development programs, federal legislation and competitive grants support the measurement and acquisition of deeper learning competencies among U.S. kids.

"One policy the nations with top performers appear to share is clear expectations for student learning that include an emphasis on the ability to use knowledge to solve real-world problems," Rothman said. "Such an emphasis might seem unlikely in Asian countries, which have reputations for a focus on drill and rote learning, but these nations, too, have shifted to curricula and assessments that address critical thinking, problem solving, communication, and other deeper learning competencies."

-- Emily Ann Brown covers competitiveness issues for LRP Publications.

December 9, 2013