

High-quality standards, a curriculum based on critical thinking can enlighten our students

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One of the central lessons of No Child Left Behind is that if school sanctions are tied to test scores, the testing tail can wag the schooling dog. And a key problem for the United States is that most of our tests aren't measuring the kinds of 21st century skills we need students to acquire and that are at the core of curriculum and assessment in high-achieving countries.

While a debate rages about whether our tests should be created at the national or state level, this argument is focused on the wrong issue.

We need to focus on the quality of our standards and assessments rather than fighting over who administers them. Unless we change the way we think about learning and testing, it won't matter who makes the tests. They will still be a major part of the problem of American education, rather than the solution.

The plain truth is that the United States is falling far behind other nations on every measure of educational achievement. In the latest international assessments, the United States ranked 28th out of 40 countries in math - on par with Latvia - 20th in science, and 19th in reading, even further behind than a few years ago. In addition, these other countries surpass us in graduation rates and, over the last decade, in higher education participation as well.

Although 60 percent of our high school graduates go off to college, only half of these are well-enough prepared to graduate with a degree - far too few for the knowledge economy we now operate. So, while our own youth are often unprepared for modern employment, Silicon Valley lobbies for more H-1B visas to bring in skilled workers to fill high-tech jobs.

Among the highest-achieving countries, some - including Japan and Singapore - have national standards and tests. Others - such as China (where Hong Kong and Macao score well), Australia and Canada - have state-level standards and tests. Top-scoring Finland focuses primarily on local assessment. While these countries manage their systems differently, they have in common a curriculum focused on critical thinking, problem solving and examinations that require students to solve complex real-world problems and defend their ideas orally and in writing.

In most cases, their assessment systems combine centralized (state or national) assessments that use mostly open-ended and essay questions with local assessments given by teachers,

which are factored into the final examination scores. These local assessments - which include research projects, science investigations, mathematical and computer models and other products - are mapped to the syllabus and the standards for the subject and are selected because they represent critical skills, topics and concepts. They are generally designed, administered and scored locally.

By contrast, our multiple-choice tests - which focus the curriculum on low-level skills - are helping us to fall further and further behind. Another part of the problem is that the standards used to guide teaching in many states are a mile wide and an inch deep: Most high-achieving countries teach (and test) fewer topics each year and teach them more thoroughly so students build a stronger foundation for their learning.

Whereas students in most parts of the United States are typically asked simply to recognize a single fact they have memorized from a list of answers, students in high-achieving countries are asked to apply their knowledge in the ways that writers, mathematicians, historians and scientists do.

In the United States, a typical item on the 12th grade National Assessment of Educational Progress, for example, asks students which two elements from a multiple choice list are found in the Earth's atmosphere. An item from the Victoria, Australia, high school biology test (which resembles those in Hong Kong and Singapore) describes how a particular virus works, asks students to design a drug to kill the virus and explain how the drug operates (complete with diagrams), and then to design and describe an experiment to test the drug - asking students to think and act like scientists.

Locally, students in other countries also complete required assessments like lab experiments and research papers that help evaluate student learning in the classroom. These assessments, which together count at least half the total examination score, allow the testing of complex skills that cannot be measured in a two-hour test on a single day. They ensure that students receive stronger learning opportunities. And they give teachers timely information they need to help students improve - something that standardized tests that produce scores several months later cannot do.

These assessments in other nations are not used to rank or punish schools, or to deny promotion or graduation to students. (In fact, several countries have explicit proscriptions against such practices.) They are used to evaluate curricula and guide professional learning - in short, to help schools improve.

By asking students to show what they know through real-world applications of knowledge, these other nations' assessment systems promote serious intellectual work that is discouraged in U.S. schools by the tests many states have adopted under No Child Left Behind. Although some states, such as high-scoring Connecticut, Maine, Vermont and Nebraska, have created assessments that resemble those in other countries, the requirements and costs of No Child have led an increasing number of states to abandon their challenging performance assessments for more simplistic machine-scored tests.

A growing body of research has shown that as more stakes become attached to such tests, teachers feel pressured to teach a multiple-choice curriculum that does not produce skills as they are used in the real world. Fully 85 percent of teachers in a recent poll said they feel the tests encourage them to teach in ways that are counterproductive.

As one teacher put it: "I have seen more students who can pass the (state test) but cannot apply those skills to anything if it's not in the test format.

I have students who can do the test but can't look up words in a dictionary and understand the different meanings. ... As for higher-quality teaching, I'm not sure I would call it that. Because of the pressure for passing scores, more and more time is spent practicing the test and putting everything in test format."

Studies confirm that as teaching looks more like testing, U.S. students are doing less writing, less science, less history, reading fewer books, and even using computers less in states that will not allow their use on standardized tests.

Indeed, as state test scores have gone up under No Child Left Behind, scores on other tests measuring broader skills have not. Data on the National Assessment of Educational Progress show that the rate of improvement in math achievement has slowed considerably since No Child was passed in 2002, and reading achievement has completely stalled, with declines at the eighth-grade level. This is likely because a test prep curriculum in the early grades does not provide the foundation that students need to do higher-level work later on.

We need to encourage our schools to teach and evaluate the higher-order thinking and performance skills that leading nations emphasize in their systems, and this requires major changes in No Child Left Behind.

The draft House bill for reauthorizing No Child, under the leadership of the chairman, Rep. George Miller, D-Martinez, would begin to rectify this situation by permitting states to use a

broader set of assessments and encouraging the development and use of performance assessments, like those used abroad.

These changes, though not yet as far-reaching as they ultimately need to be, are a necessary step in the direction needed to create a globally competitive curriculum in U.S. schools.

As the House bill is revised and the Senate bill is drafted in the coming weeks, creating the incentives for a 21st century education system - rather than one pointed at the factory model of the past - should be a leading priority.

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