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Assessment for Understanding: Taking a Deeper Look

Performance assessments go beyond traditional tests and serve as an important teaching tool.

by Roberta Furger

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VIDEO: Assessment Overview: Beyond Standardized Testing
Running Time: 9 min.

Every spring, millions of school-age children throughout the United States sharpen their No. 2 pencils and prepare to take a battery of standardized tests. It's a ritual that has come to represent the nation's commitment to high academic standards and school accountability. Parents use test scores to gauge their child's academic strengths and weaknesses; communities rely on these scores to judge the quality of their teachers and administrators; and state and federal lawmakers use these scores to hold public schools accountable for providing the quality education every child deserves.

For many, these standardized tests -- and the countless other smaller tests that are commonplace in today's classrooms -- are what come to mind when they hear the term "assessment." We look to the end-of-week spelling test, the end-of-quarter biology exam, even the high-school exit exam, to tell us whether our children are developing the skills and learning the material they'll need to succeed both in and out of school.

But tests aren't the only way to gauge a student's knowledge and abilities, just as reciting formulas and memorizing the periodic table is not the only way to learn chemistry. Throughout the country, many educators are going beyond traditional tests and using performance assessments in their K-12 classrooms to gauge what students know and can do. They're designing projects that require students to apply what they're learning to real-world tasks, like designing a school building or improving the water quality in a nearby pond. And they're giving students the experience, as assessment expert Grant Wiggins says, "of being tested the way historians, mathematicians, museum curators, scientists, and journalists are actually tested in the work place."

In a classroom setting, performance assessment is an essential companion to project-based learning. By developing comprehensive rubrics (or criteria) by which to evaluate student performances, teachers ensure that projects are more than just fun and engaging activities. They're true tests of a student's abilities and knowledge, linked to standards, and documented so that everyone -- students, parents, and educators -- understands what is being assessed. The "performance" can include a wide range of activities and assignments: from research papers that demonstrate how well students can evaluate sources and articulate an opinion to experiments or problems that enable a teacher to gauge a student's ability to apply specific math or science knowledge and skills. Some performance assessments consist of individual projects; others require groups of students to work together toward a common goal. But whatever the project or problem, well-crafted performance assessments share a common purpose: to give students the chance to show what they know and can do and to provide teachers with the tools to assess these abilities.

Assessment in Action

Assessment is a way of life for the 120 students at Urban Academy in New York City. Every day and in every class students are encouraged and expected to demonstrate what they're learning. In Constitutional Law, they're required to argue a case before a mock supreme court. In geometry, they must apply mathematical concepts to measuring the height and volume of buildings or the distance between South Ferry and Staten Island using the Statue of Liberty as a reference point. And before they receive their high school diploma, students must complete separate performance assessments (known at Urban as "academic proficiencies") that demonstrate their skills and knowledge in six academic areas:

Instruction

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At Urban Academy High School in New York City students "show what they know" through a series of

mathematics, social studies, science, creative arts, criticism, and literature.

"It's a system of assessment, not a single instrument," says Urban's co-director Ann Cook. "It's a system based on a number of components, it goes on all year long, and it culminates in certain kinds of tasks that demonstrate what students can do." These tasks might include writing a play and having it performed in front of the entire school, reading and studying a piece of literature and then being able to engage in a thoughtful conversation about it, or designing and conducting an original science experiment. With each proficiency, students must be prepared to share their work with classmates, teachers, and outside experts, who routinely lend their real-world expertise to Urban's assessment process.

performance assessments, such as this mock trial in Constitutional Law class.
Credit: Edutopia

Urban and more than 30 other "alternative" high schools that are part of The New York Performance Standards Consortium have adopted these rigorous performance assessments as an alternative to the Regents Exams that high school students throughout New York are required to pass in English, math, history, and science in order to earn a diploma. Although their procedures may vary, all consortium schools have adopted a system of assessment that is aligned to state standards and based on a series of well-defined rubrics, so both the student and the teacher clearly understand the criteria upon which work is evaluated. A Performance Assessment Review Board (an external group of educators, test experts, researchers, and members of the business and legal community) monitors the performance assessment system and evaluates samples of student work.

The consortium, says Stanford Professor of Education Linda Darling-Hammond, represents an attempt "to develop high-quality performance assessments … that can be evaluated in a reliable way." Darling-Hammond, who has worked with the consortium for more than a decade, points to member schools' high college acceptance rate compared with that of all New York City schools (91 percent versus 62 percent) as a testament to their rigorous curriculum and assessment.

Applied Learning

Students in Eeva Reeder's geometry class at Mountlake Terrace High School near Seattle spend six weeks applying their geometry skills to the challenge of designing a school for the year 2050.
Credit: Edutopia

Across the country at Mountlake Terrace High School near Seattle, Washington, geometry teacher Eeva Reeder began implementing performance-based assessments when she recognized a disturbing pattern among her students. They could pass a test with flying colors but had considerable difficulty transferring knowledge and skills from one unit to the next.

Her response to this dilemma was to incorporate projects into her geometry class -- small-scale projects at the end of each unit of study, as well as a longer-term culminating project -- that require students to apply the abstract skills and formulas to real-world settings.

Completing a project, says Reeder, "is the true test of what you know. You can watch a show where Julia Child makes a soufflé, and you can read about soufflé making," she adds, but the real test is "making one yourself."

In Reeder's class, the true test of her students' geometry skills is an architectural challenge. In six weeks, students must design a high school that will meet the needs of students in the year 2050. Working in small teams, students are required to develop a site plan, create a scale model, prepare cost estimates, and write a formal proposal. They must also present their plan to their classmates and a group of architects who serve as mentors and judges throughout the project.

Assessment of the design projects occurs in several ways. At the beginning of the project, students are given the scoring rubric by which their work will be measured. Each part of the project is evaluated based on quality and accuracy, clarity and presentation, and concept. Reeder also evaluates teamwork (participation, level of involvement, quality of work as a team member) during the course of the project and at the end.

"There are two reasons for assessment," says Reeder. "One is to provide students feedback on the quality of their work and specifically on how they might improve that quality. The other is to assign a score or grade." Scoring is the easy part, she adds, and can be accomplished with the help of a "reasonably prepared" test.

"But you can't assess a student's deep understanding of a subject and their ability to apply a concept through a traditional paper-and-pencil, crank-out-the-formulas kind of assessment," says Reeder. "It has to be done with a performance assessment."

Assessing Student Growth

One common form of performance assessment is the development of a student portfolio -- a cumulative record of a student's work over time. It's a practice that's been used at the Key Learning Community, a K-11 school (it'll have its first senior class in the Fall of 2002) in Indianapolis, since the school first opened its doors in the fall of 1987.

Project-based learning and student presentation of work is an integral part of the Key Learning assessment program. Every semester, students select and research a project that corresponds to a schoolwide theme. These presentations are documented on videotape and by the time a student completes eighth grade, he or she has a portfolio documenting as many as 25 projects.

In 1999, Key Learning opened its high school (beginning first with a single class of ninth graders), and with the older students came a move toward improved use of new technologies to capture student work. Now, students begin creating Apple Macintosh iMovies® in middle school and continue using the program throughout high school to document and present their work.

Student progress reports (there are no traditional report cards) are based on Howard Gardner's theory of multiple intelligences and Ernest Boyer's theory of human commonalities. Before earning their high school diploma, Key Learning seniors must document and demonstrate their applied knowledge in what Boyer identified as eight human commonalities. These include (but are not limited to) the shared use of symbols (through the creation of a major multimedia presentation), shared production and consumption (through a project on marketing and economics), and the shared sense of time and space (through a project on the history of Indianapolis or the contributions of an ethnic group to the development of the city).

As the school's eleventh graders gear up for the college application process, Key Learning is investigating ways to create smaller but representative portfolios of student work on CD-ROMs, which will be made available to college admissions departments.

Research papers at Urban Academy go through multiple revisions before students and teachers alike consider them complete. *Credit: Edutopia*

Time Well Spent

Despite their many differences, these three schools share a common commitment to developing a project-rich curriculum that's supported and influenced by a thoughtful system of assessment. Teachers, students, and parents all understand that the most effective assessment doesn't happen at the end of a unit. It's woven throughout lessons and projects, often so seamlessly as to be indistinguishable from everyday teaching and learning.

Without question, these high-quality performance assessments take time. The typical research paper at Urban Academy, for example, will go through multiple revisions before the student and his or her teacher consider it complete. With each revision comes a discussion about key issues to be addressed, questions yet to be answered, and concepts that require further development. A single proficiency might take a semester or even an entire year for a student to complete and might involve hours and hours of discussions with Urban teachers and an outside evaluator. At Mountlake Terrace, geometry teacher Reeder spends many hours on just the logistics of her six-week-long architecture project, such as organizing field trips to the local architects' office and coordinating classroom activities with the mentors' busy work schedules.

"Performance assessments do engage people in work and time. Students have to develop the performances. The teachers have to evaluate them," acknowledges Darling-Hammond. But, she emphasizes, "the time is not lost to teaching and learning. The time *is* teaching and learning, because the actual conduct of the assessment is a learning experience for students as well as teachers. It informs teaching. It gives teachers immediate feedback about what they need to do to meet a student's needs."

And with that immediate feedback comes the ability to intervene, to change course when assessments show that a particular lesson or strategy isn't working for a student, or to offer new challenges for students who've mastered a concept or skill. In this context, says performance assessment researcher Karen Sheingold, assessment and learning become "two sides of the same coin" rather than separate and distinct activities.

Assessment Versus Accountability

In many U.S. classrooms and schools, assessment practices aren't just about improving teaching and learning for individual students. They're inextricably bound to the public's demand for greater accountability. All 50 states administer annual assessments to their students, the results of which can determine whether a student is promoted or retained and whether teachers get bonuses or a school gets reconstituted.

Although multiple choice and short-answer tests are still the norm, states are gradually incorporating performance-based assessments into their standardized tests. *Credit: Edutopia*

These tests, because of their high stakes, have an incredible influence on classroom practices. For example, nearly 70 percent of the teachers responding to a 2000 Education Week survey on standards and accountability said that state assessments were "forcing them to concentrate too much on what's tested to the detriment of other important areas of learning." The teachers reported dropping longer units with rich assessment components in favor of more traditional lessons that reflected the type of material and format common in most state assessments.

Few would argue with the need, as National Urban League President Hugh Price says, to "know whether or not children are learning, and whether they're performing on grade level or better or way below." But when the stakes are too high, this laudable goal gets distorted. Teachers begin "teaching to the test" to raise scores, often at the expense of more meaningful learning activities. And when the tests are too narrow a measure or aren't properly aligned to standards, they provide little concrete information that teachers and schools can use to improve teaching and learning for individual students.

Although most states continue to use multiple-choice and short-answer items on their standardized tests, a handful of states have incorporated additional measures into their annual assessments. The Maryland School Performance Assessment Program is frequently commended for the thoughtful way in which it calls upon students to demonstrate multiple abilities in answering a single question or problem. (See Bruce Alberts' article, "Appropriate Assessments for Reinvigorating Science Education.") Kentucky and Vermont have incorporated portfolios into their statewide assessments of student achievement -- another effort to offer a broader picture of student achievement. The Massachusetts Reform Review Commission has convened representatives from various stakeholder groups to devise a strategy for expanding the Massachusetts Comprehensive Assessment System "to make it fairer and more comprehensive."

These additions are important and necessary, says Harvard University education professor Chris Dede, in order to really understand what students know and can do. "The current reform movement is based on first-generation standards and first-generation assessments for accountability," says Dede. "And while standards and accountability are good," he adds, "the first generation is flawed. Instead of multiple indicators of what students know, we end up with a single test score that somehow is supposed to capture everything that's inside of a student's head."

Dede (who is also a member of The George Lucas Educational Foundation's National Advisory Council) likens state assessments to an annual visit to the doctor and suggests that we need more, not less, information to gauge a student's knowledge and abilities. "When I go to a doctor for a physical, it's an indicator of overall wellness. I just don't want to know about my blood pressure. I want to know about my cholesterol level and a variety of other indicators. Somebody's educational well-being is more complicated than their physical health," says Dede. "In our second-generation's standards, we need deeper focus on fewer skills that are central to the twenty-first century," he adds. "And in our second-generation assessments, we need broader measures, multiple measures that look at the different kinds of things that students have learned and have mastered."

Roberta Furger is a contributing writer for Edutopia.

This article originally published on 1/21/2002

teaching to the test

Submitted by Jane (not verified) on March 26, 2009 - 09:50.

I agree with many of the comments posted to this site--that standardized tests promote teaching to the test and are not true measures of what an individual has come to understand. I have been a licensed health care professional for over 35 years and in additional to needing to score high on standardized college admittance exams and standardized professional school admittance exams, I had to pass rigorous standardized exams to earn my license. I believe my education focused on two goals--to develop technical skills and pass the national board.

As a newcomer to health care education, I am sensing a change in how we educate people in professional programs compared to when I was in school. There seems to be a strong movement away from the traditional lecture format to more of a case based learning or problem based learning format. Students do engage in these learning activities and demonstrate understandings, however standardized testing for admittance to programs and licensure remains. It seems we still need to teach to pass the test.

Jane Halaris
Graduate Student
Curriculum and Instruction
University of Detroit Mercy

reply

assessments?

Submitted by nikki (not verified) on March 26, 2009 - 06:44.

I have mixed feelings. I agree that some type of assessments needs to be done, so that acccountability is montiored on all levels;however, to what extent and what assessment is another thing. Standardized testing does not benefit all and if the student is the most important aspect in all of this, then more needs to be done to make ensure students are learning and understanding instead of being "taught the test".
I concur with the writer that "tests aren't the only way to gauge a student's knowledge and abilities". I think portfolios are a great idea and are useful. I think in preparing students in the "real world" more experiments and application projects need to be completed. As an adult many of us do not take test to gauge our work preformance but rather application measures our understanding of our job description.
In conclusion, some median needs to happen to be effective, all students are not great test takers but can tell u in a regular setting how, why, where, and who. Or you can have a great test taker who studied for the test and a week, month, year later don't have a clue on the same information.

reply

Portfolios

Submitted by Amanda Boats (not verified) on March 25, 2009 - 19:25.

I like the idea of using portfolios as a cornerstone of student assessment. This tool will allow students to self select products that demonstrate their mastery of concepts. It would be interesting to study how Kentucky and Vermont have incorporated this tool into their statewide assessment program.

reply

Greater buy in...

Submitted by Mike Verdusco (not verified) on March 24, 2009 - 10:20.

To change the thinking about assessment there will have to be a paradigm shift in the mindset of not only educators but also community, administration, and government. The parents of children may not like the current standardized testing but they understand the results, it can get more difficult to visualize where assessment practices such as portfolios are helping their child. The same can hold true for the government and/or administrators that establish the standardized testing. It is much easier for the numbers to be processed and compared under the current system. It is also easier to swoop in once or twice a year for standardizing testing as apposed to longer monitoring of project based assessment. How can the value of of moving onto a new system be illustrated, even when most everyone agrees that the current system has serious flaws? By explaining the assessment process to parents they are likely to be more receptive of new assessments methods and any issues they do have can be addressed. The bean counters need to have numbers, if portfolios assessment can result in standard numbers that can be tracked year over year, they be appeased. This seems so simple but it is a monumental task, because what if it doesn't work? Sometimes it is easier to hold on to the broken,

instead of exploring the untested or unknown.

reply

Assessment

Submitted by Laurie Mazzoli (not verified) on April 12, 2009 - 09:43.

I agree. The multiple choice, open-ended questions and holistic scoring on writing on the state assessment tests make it very easy for the scorers. Grading a portfolio or project is a much more difficult task. And when revision comes into play, there is more time and work involved. We have students work in groups because the data tells us this is what they will have to do in the real world, but never are they tested in that area on the state level. I worked at a private school for 3 years where we had to write out reports about the students' learning. This was very time-consuming and we were not paid for the overtime we put in to do this. We also had to have meetings with parents to discuss these reports. Again, very time consuming. It is "easier to hold onto the broken instead of exploring the tested or unknown."

reply

As I read this article I

Submitted by Colleen Kuxhaus (not verified) on March 20, 2009 - 08:23.

As I read this article I kept coming back to the way we have been changing our assessment protocol at the dental school for our graduate periodontics residency program. Residents begin their portfolios in their first year and continue with entries as they progress. Using a performance assessment structure to validate learning and understanding has proved to be very useful tool in our program. I feel that more shareholders in the educational world need to be aware that there are more than the standardized testing to demonstrate students understanding the the ability to take it to real-world situations.

reply

All lawmakers, parents,

Submitted by Suzanne FLoyd (not verified) on March 19, 2009 - 18:02.

All lawmakers, parents, business professionals, and all others outside the educational field need to read this article and maybe it will help them understand that stnadardized tests are not the ultimate indicator of student achievement. These test can be useful but they also are flawed. Often students just bubble in the answers because they want to get the test over with. Some student do well because they are good at guessing answers. Others don't understand the questions because of lack of background knowledge. The list goes on...........!
The educational community should push for a combination of performance based authentic assessments along with the standardized test. This will paint a clearer picture of the understandings the student possesses and how he/she can apply them to life and problems.

reply

I agree that we have moved

Submitted by Suzanne Floyd (not verified) on March 19, 2009 - 17:39.

I agree that we have moved into a "second generation of standards" and that the focus should be placed on "fewer skills and deeper understanding" instead of using only traditional tests. Standardized test can be used to assess facts but performance assessments work well for gauging deep understanding.
In my opinion, The state tests like the MEAP,do not necessarily show what the student understands. A child could perform well and be a good guesser. Others may earn high scores but not be able to apply the knowledge to real-life situations.I think a combination of standardized and performance assessments would paint a clearer picture of student achievement and UNDERSTANDING. Also, the students would receive better feedback so they could see where they stand.
The problem may be the lawmakers and business professionals who fail to see that a one- time test isn't the only indicator of students' understandings and capacity to successfully master skills.

reply

Performance Assessment

Submitted by George Bracey (not verified) on March 19, 2009 - 16:35.

I am currently a 10th grade Geometry teacher in the State of Michigan. Although I throughly enjoyed the article, I believe that our student's educational needs lie with both performance assessments, and standardized testing. Standardized tests such as the "ACT" are being observed and considered more than ever by college entrance boards. The reason this is true, is because a test like the "ACT" is given in the exact same format accross the entire country. Many believe that it measures the skill level of all students, despite ethnic background or social differences. However, there is nothing like a hands-on project to bring out the best in many different types of learners. I also believe that the skills learned during a project can become transferable to the skills needed during many standardized test. As our students find themselves more immersed into a global society, they may find that both skill sets are required for success. Perhaps what we need to do as educators, is to find a way to include both types of assessments within our curriculums.

reply

Harsh Realities...

Submitted by GraylingM (not verified) on March 19, 2009 - 16:11.

Unfortunately (and realistically), the harsh reality that most schools face in this financially driven, high-stakes shell game entitled "No Child Left
Behind" is that standardized tests are the driving force behind education. Unlike focusing on raising standardized test scores, Project-based learning not only provides the "What?", but demonstrates the "How?" and "Why?" of many topics. Considering Gardner's theory of multiple intelligences, one must see that students are not all alike and perform well in different areas. Should we not consider the whole of the student's education (as a lifelong learner) as opposed to their ability to memorize and regurgitate facts on command? This truly is how I believe that many in the inner-city school districts begin to fail our children...

reply

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