

# CULTURE AND ASSESSMENT:

## Discovering What Students Really Know

From *R&D Alert*

How can we know what students know?

At first, the answer seems simple. After teaching new information and providing time to practice concepts or skills, we assess their understanding with a quiz or test. To find out how a student or a group compares to peers, we standardize the tests so that all students answer equally challenging questions.

But what if the way we ask the questions unintentionally causes some to fail? What if our assessments miss uncovering the depth and complexity of knowledge because they contain assumptions about language, culture, values, and experiences that these students don't share?

These concerns have inspired work by Sharon Nelson-Barber, formerly the Director of WestEd's Center for the Study of Culture

and Language in Education. The center's research focused primarily on how culture, language, and socioeconomic status influence the ways people think and solve problems. More recently, Nelson-Barber has been exploring how cultural background, particularly of indigenous students, may affect performance on large-scale standardized achievement tests and what can be done to make the assessments more accessible and equitable.

In one study, Nelson-Barber and colleagues looked at how students interpreted science and math items on the National Assessment of Educational Progress. An 8th grade science item asked for one "advantage" and one "disadvantage" to using laboratory animals such as mice, guinea pigs, and monkeys as "models" to help find cures for human diseases. An indigenous Hawaiian student described a disadvantage as fol-

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lows: "There is no such thing as laboratory animals. All animals are our brothers and sisters and our spiritual teachers. We don't have the right to use or kill them unless it is for food."

The questions raised by the cultural mismatch between this student's view of the world and the test question aren't principally about what's correct or incorrect. The bigger issue is that the question elicits very little of the stu-

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dent's understanding of laboratory science. On the other hand, it does provide useful information on how to be effective in teaching him.

Noting that some indigenous communities have developed culturally acceptable ways for their children to engage in classroom activities, Nelson-Barber says, "Getting to that point involves communication with elders and others in the community based on mutual respect. In some situations, elders may conduct an appropriate ceremony before students participate in an activity such as animal

dissection which would otherwise be taboo."

**Assessing Culturally Rooted Ways of Knowing**

Assessments that accurately reflect traditional ways of knowing for a specific cultural group can produce richer and more valid results. Consider schools where curricula and assessments are based on the culture and experiences of the Yup'ik, an indigenous group from Alaska. Subject content is routinely taught through everyday activities in the culture, such as basket making, fishing, and navigating using landmarks and, after dark, constellations of stars. Validity of the assessments is further refined when educators consult with tribal elders. Cultural authorities can determine if, for example, test questions correctly represent the perceptions and experiences of people whose traditional orienteering practices make use of sophisticated math and science reasoning.

Testing that is authentic in this way gives students the opportunity to draw on their cultural heritage to express deeper understanding of concepts and to use their experiences to interpret new information.

"Only a fraction of actual student knowledge is assessed by many test questions. With more culturally relevant assessment, we seek to increase that percent-



age considerably," Nelson-Barber explains.

Nelson-Barber cautions that her research does not suggest that each culturally cohesive group of students will need a culturally specific assessment. Nor does it mean that students needn't ever learn to take standardized assessments. But without investigating the varied perceptions that students bring to testing, educators and policy makers may never be able to discover what students actually know, or to design tests that fully measure their understanding.

For years, educators and researchers have been aware that the format of a test and its language and vocabulary can sometimes unfairly penalize students who lack common context. Test developers have tried to correct for cultural bias. Schools have made accommodations for certain groups of students, such as allowing extra time on tests for those learning English as a second language. But often adjustments are ineffective because they are based on limited experience with particular cultural groups.

In some cases, Nelson-Barber says, test developers might start with the faulty belief that students who share the same racial or ethnic heritage or language also share the same culture, when in reality there may be vast differences among the students' personal experiences because of family income or geog-

raphy. Other times, the test questions or process might not account for the fact that some children are taught to publicly camouflage their knowledge so that others don't feel inferior. Additionally, developers may not take the step of verifying that students with diverse cultural backgrounds actually understand what the assessment is asking.

Nelson-Barber recalls study team discussions about one math test question that focused on apportioning the ingredients used to make tacos, a food test developers believed more familiar to Mexican immigrants, and thus, more relevant to Mexican students taking the assessment. But, in response to a test question about how many tacos could be assembled and distributed based on identified ingredients, some students gave the wrong answer not because they didn't understand division but because their experience with portion sizes differed from those assumed by test developers.

### **Cultivating Cross-Cultural Awareness**

Nelson-Barber's interest in refining testing goes beyond her belief that culturally sensitive assessments are more valid and fair. She advocates for cross-cultural awareness and competence in assessment and teaching because such understanding sets a more solid foundation for improving student success. ▶

"This is much broader than assessment. We must better prepare teachers to understand cultural diversity," Nelson-Barber says. "They're not ever going to know everything about every child in their classrooms. But they will be more effective if they ask basic questions about students' cultural backgrounds: What are some of the general principles that I need? What individuals or institutions do I need to know about or what activities do I need to participate in so that I can get a sense of how people are thinking, communicating, what they want for their children?"

How teachers assimilate that information into their instruction "can really make all the difference in moving a child's learning experience forward." In observations of teachers who are most effective with students from diverse cultural backgrounds, Nelson-Barber and her colleagues have found that they respect and actively nurture the children's prior knowledge. By momentarily setting aside their own cultural assumptions to listen to how students view the world, such teachers make it safe for everyone to ask questions, clear up misconceptions, and fully express their knowledge. "Understandably, students can be more fully engaged in learning when they don't feel they have to leave parts of their identity outside the classroom," she says.

At a policy level, test developers and education leaders can do more to investigate why some assessments produce poor results. Ideally, Nelson-Barber says, deep cultural awareness would inform test creation, dissemination, and evaluation. Such a comprehensive approach might move closer to eliminating cultural bias in testing and the need for accommodations for some groups of students.

At the school level, teachers and administrators can forge alliances with parents and leaders of different cultural groups represented in the school population. These partnerships can be especially vital to school communities where demographic shifts have changed the student populations of many classrooms. ■



"It may have been a teachable moment for you, but it wasn't a learnable moment for me."

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