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Boosting Success for 21st Century Learners Webinar Series

Cultural Validity in Assessment

In this webinar we share lessons learned from research and field experiences, illustrated by apt and eye-opening examples of how the failure to consider students' contexts in designing assessments and assessment practices can result in wrong conclusions about student learning.

Disclaimer

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Boosting Success for 21st Century Learners Webinar Series

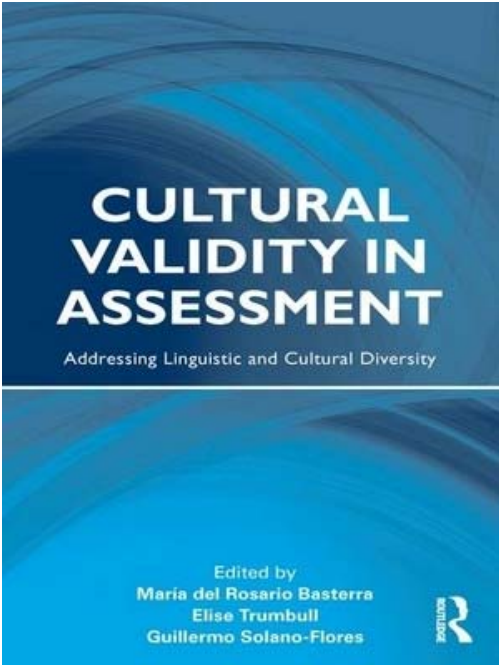
**Cultural Validity in Assessment:
Addressing Linguistic and Cultural Diversity**

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&


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**CULTURAL
VALIDITY IN
ASSESSMENT**

Addressing Linguistic and Cultural Diversity

Edited by
Maria del Rosario Bastera
Elise Trumbull
Guillermo Solano-Flores



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Objectives

- Understand the concept of cultural validity and its relevance in today's assessment.
- Recognize how cognition, language, and culture have an impact on assessment performance.
- Learn how to use and implement culturally valid assessments in the classroom.

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First NSF Study: Assessing Assessment Cultural Validity

- Participants: Students from twelve sociocultural contexts (ethnicity, language background, SES, geographical area, locale, type of school)
- Students were given items used in standardized testing that are supposed to be “culturally-sensitive”
- Students were asked to explain how they interpreted the items and how they related their content to their personal experience

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Second NSF Study: Sociolinguistic Perspectives in Testing

- Participants: Students from different geographical areas who are assumed to speak different dialects of the same language; teachers who are familiar with the dialect spoken by their students
- Teachers from different sites adapt the same set of items based on their knowledge of their students' dialects
- Students take the tests in both dialect versions

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Limitations of Current Approaches to Testing Linguistic and Cultural Minorities

- Lack of theories of language and culture
- Testing practices driven by erroneous assumptions about language and culture
- Erroneous assumptions about the effectiveness of current testing practices
- Recent, cognitive approaches to testing overlook the important cultural influences on cognition

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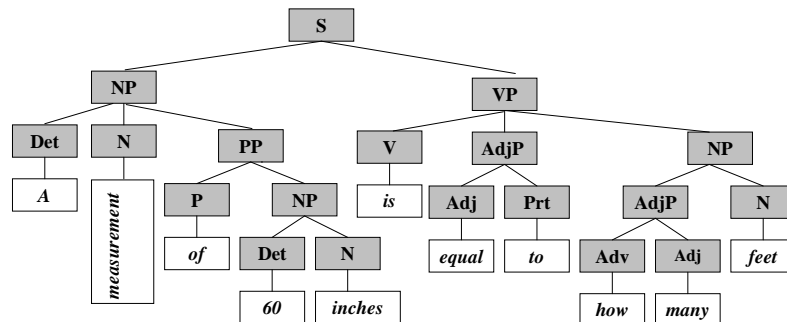
The Lunch Money Item

Sam can purchase his lunch at school. Each day he wants to have juice that costs 50¢, a sandwich that costs 90¢, and fruit that costs 35¢. His mother has only \$1.00 bills. What is the least number of \$1.00 bills that his mother should give him so he will have enough money to buy lunch for 5 days?

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A measurement of 60 inches is equal to how many feet?



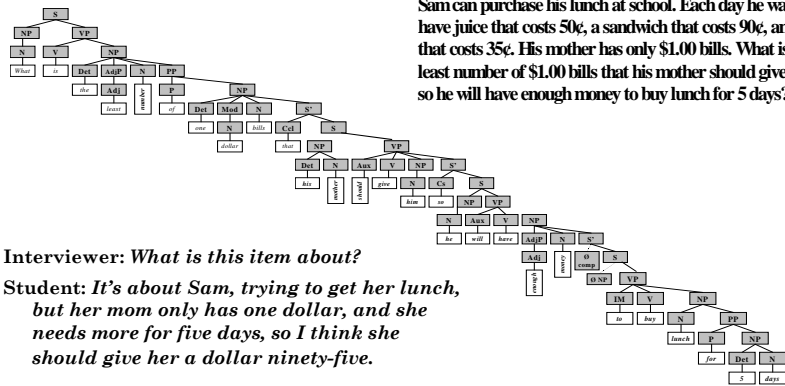
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Solano-Flores, G., Trumbull, E., & Kwon, M. (2003). *The metrics of linguistic complexity and the metrics of student performance in the testing of English language learners*. Symposium paper presented at the 2003 annual meeting of the American Evaluation Research Association, Chicago, IL, April 21-25.

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What is the least number of \$1.00 bills that his mother should give him so he will have enough money to buy lunch for 5 days?

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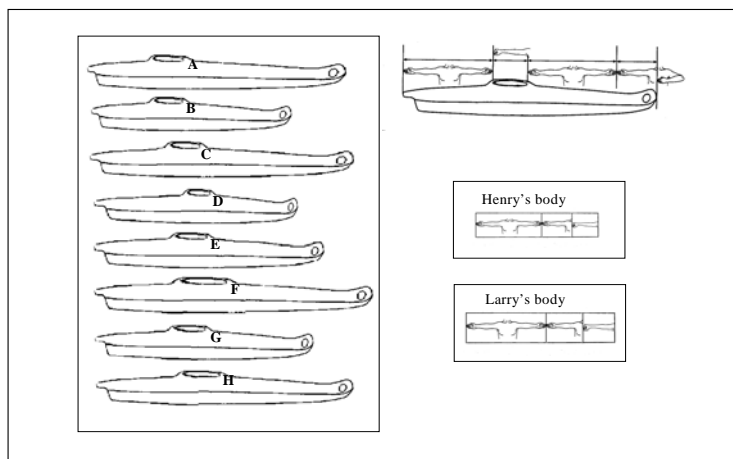
Interviewer: *What is this item about?*

Student: *It's about Sam, trying to get her lunch, but her mom only has one dollar, and she needs more for five days, so I think she should give her a dollar ninety-five.*

Solano-Flores, G., Trumbull, E., & Kwon, M. (2003). *The metrics of linguistic complexity and the metrics of student performance in the testing of English language learners.* Symposium paper presented at the 2003 annual meeting of the American Evaluation Research Association, Chicago, IL, April 21-25.

Mid-Atlantic Equity Consortium, 2012.

Assessing Others: The *Kayak* Experience



Solano-Flores, G., & Nelson-Barber, S. (2001). On the cultural validity of science assessments. *Journal of Research in Science Teaching*, 38(5), 553-573.

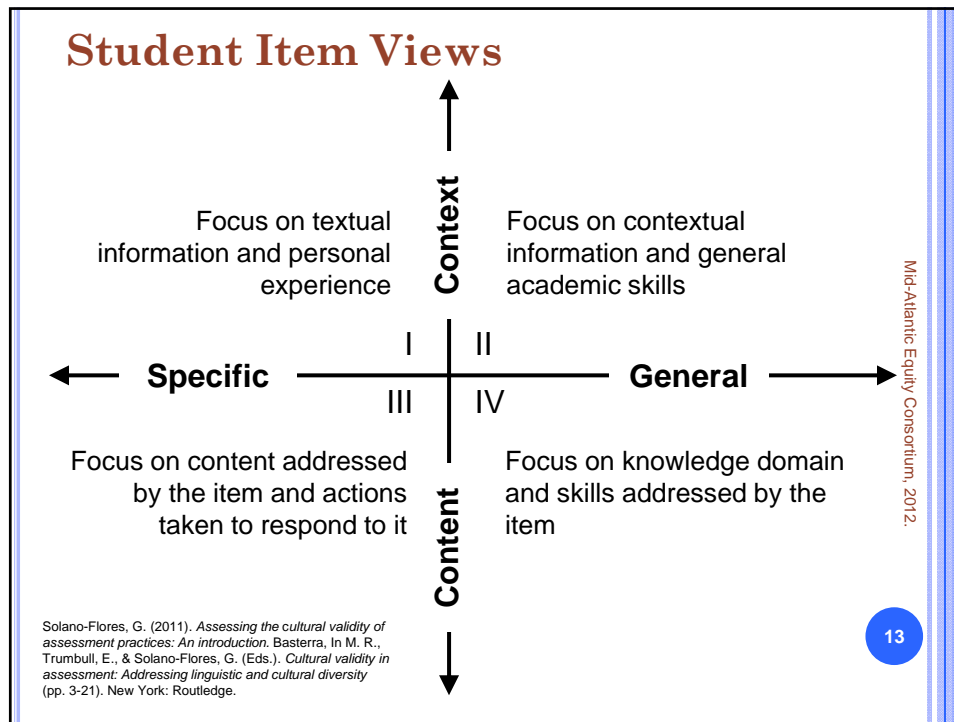
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Challenges in Addressing Culture in Assessment

- While every assessment program and every test developer has procedures intended to address culture, many of those procedures address culture superficially.
- Conventional approaches to addressing culture (e.g., review by teachers) are necessary but not sufficient to properly address culture.
- It is difficult to anticipate which aspects of test items (contextual information, vocabulary, content) may have an impact on diverse cultural groups.

Cultural Validity: Definition

[E]ffectiveness with which [...] assessment addresses the sociocultural influences that shape student thinking and the ways in which students make sense of [...] items and respond to them. These sociocultural influences include the sets of values, beliefs, experiences, communication patterns, teaching and learning styles, and epistemologies inherent in the students' cultural backgrounds, and the socioeconomic conditions prevailing in their cultural groups.



Language as Part of Cultural Validity

- Language plays a huge role in student assessment. Any effort to achieve cultural validity must take language into account.
- Many assessments are as much a test of language as of the targeted content skills and knowledge.

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Research has shown:

- The language of many assessment items is unnecessarily complex.
- When the syntax and vocabulary of an assessment item are simplified, students do better (especially ELLs).
- Students from different backgrounds respond differently to changes in the topic and format of an assessment task.

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Language Variation

- Evaluating language demand is relevant for achieving validity for *all* students.
 - Developmental differences
 - Differences in language status (bilingual, monolingual)
 - Differences in language variety at home
 - Differences in reading and writing skill

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Which assessment task would you think relies the *least* on language?

- a. Identifying the next geometric shape in a sequence
- b. Adding two three-digit numbers
- c. Finding one's way through a visual maze
- d. Matching the photo of an inventor with his invention
- e. Determining the next number in a sequence

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Can there be assessment without language?

- It is probably impossible to eliminate language in assessment.
- Language is usually required for instructions, if not the task.
- Even “non-language-dependent” assessments depend on mental language to represent the problem to oneself.
- Mathematics assessments are no exception.

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Language Challenges in Mathematics

- Math has its own language that must be learned with precision.
 - the math register– specialized vocabulary as well as ways of expressing relationships
- Function words matter.
 - e.g., *if, in, for, by, of, through, except, therefore*
- Natural language and mathematical language overlap.
 - *negative, product, slope, area, function, solution*
- Students from other countries may use different systems.
 - metric vs. English measurement.
- For ELLs, terminology may cause confusion.
 - e.g., *billón* (billion) in Spanish=one million millions)

Three Ways of Thinking About Language

- Structural- *language as form*
- Functional- *language as used in social contexts*
- Cultural- *language as a vehicle for values and beliefs*

4th Grade Mathematics Item: National Assessment of Educational Progress 2000

The length of a dinosaur was reported to have been 80 feet (rounded to the nearest 10 feet). What length other than 80 feet could have been the actual length of this dinosaur?

Answer _____

National Assessment of Educational Progress. (1996). *Mathematics items public release*. Washington, DC: Author.

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Structural Issues

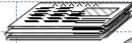
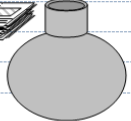


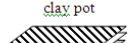

- Complex verb form: “was reported to have been”
- Subject (“what length”) separated from predicate: (“could have been”) by another phrase “other than 80 feet”

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THE PIÑATA TASK

The **López** family is going to make a piñata for their son Antonio's birthday.

1 lb.			Materials	Cost per Unit
			1 bottle of glue	\$1.50 per bottle
1 lb.			2 pounds of candy	\$4.00 per pound
			1 clay pot	\$7.00
			newspapers, colored paper, rope	
			brought by Grandma	

Tear paper into 3 in. wide strips

1. With the information above, find the total cost of the piñata. You can use pictures, numbers and/or words.
2. Explain how you used the information above to find the total cost of the piñata.

Solano-Flores, G., Trumbull, E., & Nelson-Barber, S. (2002). Concurrent development of dual language assessments: An alternative to translating tests for linguistic minorities. *International Journal of Testing*, 2(2), 107-129.

Mid-Atlantic Equity Consortium, 2011.

Mid-Atlantic Equity Consortium, 2012.

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Functional Issues

- The use of the contextualizing sentence, “*The López family is going to make a piñata for their son Antonio’s birthday*” may cause some students to interpret the item as being more about the activity of making a piñata and less about showing their math skills.

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The Aquarium Task

You are going to make a salt-water aquarium with your class. You have \$100 to spend. The chart below shows the prices for different kinds of fish and equipment. Choose the items you want, being sure to keep your total expenses to no more than \$100. Show your work.

Item	Price
12-gallon tank	\$29.00
Water pump and filter	\$12.00
Damselfish	\$ 4.00 each
Clown goby fish	\$ 5.00 each
Angel fish	\$ 3.50 each
Yellow tang fish	\$ 5.25 each
Blue tang fish	\$ 4.50 each
Box of tropical fish food	\$ 3.50

Kane, M. B., & Mitchell, R. (1996). *Implementing performance assessment: Promises, problems, and challenges*. Mahwah, NJ: Erlbaum.

Cultural Issues

- Fish are for eating.
- Fish are not for keeping as pets.
- On what basis should one decide how to spend the money?

A Few Guidelines

For Assessment Developers

- Engage linguistic and cultural experts in vetting items, not just “representative” panels of educators.
- Try out items on large numbers of students from a range of linguistic backgrounds.
- Interview students from diverse communities who got an item wrong.

For Teachers

- Become more familiar with ways of examining language complexity.
- Interview individual students who did poorly on an assessment item/task to find out how they construed it.
- Collaborate with other teachers to discuss assessment tasks and refine them. Use student work to inform this process.
- Modify the language of existing assessments.

Culture and School Assessment

- Culture permeates all aspects of assessment, including methods, choices, and attitudes towards assessment.
- Students from diverse cultural backgrounds have predisposed notions on how to respond to questions and problems. This influence the ways in which students interpret materials presented in tests and the ways in which they respond to test items.

Science Item: National Assessment Of Educational Progress 1996

Item:

Bacteria and laboratory animals are sometimes used by scientists as model organisms when researching cures for human diseases such as cancer. Describe one possible advantage and one possible disadvantage of using bacteria as models to help find cures for human diseases.

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Source: National Assessment of Educational Progress, 1996.

NAEP 8th-Grade Science Item

Response of a Hawaiian eighth grader:

Advantage: Closer to being humans

Disadvantage: There is no such thing as laboratory animals.

All animals are our brother and sisters and our spiritual teachers. We don't have the right to use or kill them unless it is for food.

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Source: National Assessment of Educational Progress, 1996.

How would you rate the student's response?

- A) Correct
- B) Incorrect
- C) Not sure

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Selecting and Using Classroom Assessments to Promote Cultural Validity

- Use different type of assessments to assess student knowledge.
- Select assessments that are flexible enough to accommodate differences in students' linguistic and cultural backgrounds.

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Types of Assessment Based on Cultural and/or Language Considerations

- Multiple-choice and true/false may be less preferred by American Indian/Alaska natives because they force a single answer rather than reflection and respect for more than one perspective.
- English language learners might respond better to assessments that do not rely heavily on English language proficiency or on knowledge of specialized or sophisticated vocabulary that has not been introduced or is not necessary.

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Conduct Classroom Observations

- Use observations to gather information about cultural preferences, individual styles, degrees of understanding, and comfort level with different types of assessment.
- Focus on how students perform and express themselves on different assessment tasks.
- Observe if students perform better on multiple-choice, short-answer, essays, oral presentations, using graphic diagrams,

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Examples of Behavior That You Could Observe and Document

- Luisa stares at the multiple-choice questions and spends a significant amount of time without answering them.
- Ya-Han, an ELL student, provides an elaborate graph about the concept of living things.
- Pedro, a student with language-based disabilities frequently asks the meaning of words in the “fill in the blank” assessment.

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Cognitive Interviews and Think-Alouds

- Cognitive interview is a process by which a teacher asks a series of questions to find out students’ reasoning in completing a particular task.
- Think-aloud is one of the cognitive interview methods that prompts students to verbalize their thoughts as they solve a problem or respond to a test item.

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Contextualization of Assessment Tasks

- Use assessment formats, and frame and pose questions taking into consideration the culture and background of students.
- Enrich the context of items to allow the students to imagine or understand concepts in connection to their own lives. This will increase the possibility of providing the correct responses.

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Example of Contextualization

Students are asked to create a **fair** race. Students are expected to create a racecourse in which each contestant runs the same distance. Those from cultures that do not emphasize competition may interpret the word “fair” in a different way and create shorter distances for slower runners, as if the item asked them to create a racecourse in which all contestants have equal chance of winning.

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Source: Making Assessment Work for Everyone, Kusimo et al. 2000 in Cultural Validity in Assessment: Addressing Linguistic and Cultural Diversity.

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Boosting Success for 21st Century Learners: Equitable Practices for High Achievement

Friday, May 4, 2012

Special focus on:

- Updated application of Civil Rights Laws
- Cultural validity in assessment
- Developing culturally competent leaders
- Creating a college-going culture
- Effective practices for ELL students
- Culturally responsive pedagogy
- Family, school and community engagement to increase academic achievement
- Access to STEM for all students

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Part II: Civil Rights in the Classroom: Special Education, Discipline and Homelessness

Thursday, April 26, 2012

11:00a.m. -- 12:30p.m.

Presenter: Natasha Quiroga, Associate Counsel
Educational Opportunities Project,
Lawyers' Committee for Civil Rights Under Law

Do you know how civil rights laws affect classrooms? What important information must district and school staff keep in mind when planning and implementing programs? Natasha Quiroga will present important points to consider in the areas of Special Education, Discipline and Homelessness.

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