

SOAPBOX DIGEST

A Publication of the Institute for the Advancement of Emerging Technologies in Education at AEL

Universal Design for Assessment

An e-mail-based Soapbox discussion by IAETE, March 2005

“Perhaps the mandates that currently face education from state and federal levels should be the catalyst to start over and create from the beginning universally designed tools to evaluate student understanding, skills, and knowledge.”

-Tracey Hall

Universal design is a process that ensures that a newly created product is useful to the broadest possible array of people, particularly those with disabilities. Often, designing for specific disabilities proves beneficial for all. The sloped curb corner, for example, allows wheelchairs, strollers, bicycles, and, indeed, any pedestrian to move more safely from the sidewalk to the street crossing.

In March of 2005, the Institute for the Advancement of Emerging Technologies in Education (IAETE) at AEL held an online panel discussion on universal design for technology-based assessment as part of its ongoing Soapbox series.

Participating in this weeklong, e-mail-based discussion were

- Tracey Hall, Ph.D., Senior Research Scientist and Instructional Designer at the Center for Applied Special Technology (CAST)
- Nathan Sparks, Assessment Specialist at the Division of Assessment and Reporting, Virginia Department of Education
- Irene Spero, Vice President of the Consortium for School Networking (CoSN)
- Lynda Van Kuren, Communications Director for the Council for Exceptional Children (CEC).

Applied to assessment, agree the panelists, universal design would mean that all students would have a better opportunity to express what they know by using their preferred methods for receiving and expressing information.

This leveled playing field is not the current default for assessment design. Tracey Hall of the Center for Applied Special Technology (CAST) voices a view shared by all panelists when she writes, “The accuracy of current large-scale assessments is undermined by construct-irrelevant factors, including access barriers, a particular problem for students with disabilities.”

However, greater access is an underlying tenet of universal design. As Irene Spero of the Consortium for School Networking points out, “Universal design in assessment is a dynamic and evolving issue.” Hall concurs, saying that research on the topic is “in its infancy.”

Indeed, it is difficult at this point to even define the role of accommodations in universal design of assessment. An often-used definition for the general concept is the design of products that will be usable by all people, to the greatest extent possible, with minimal need for additional adaptations and accommodations. For learning and assessment materials, however, Spero writes that “there is a consensus here that universal design must continue to recognize the need for appropriate accommodations.”

It is clear that as states increase assessment activity, and as those assessments are created for technology-based environments, there is an opportunity to regularly involve and refine universal design in the assessment process. There is, say these experts, an opportunity to go beyond common question formats, such as multiple choice, and to offer students flexibility in how they demonstrate mastery of the standards.

In brief, panelists are asked why retrofitting assessments is more common than beginning with universal design, what an assessment might look like when the principles of universal design are applied, what some of the challenges are, what kind of professional development is needed, and where the relationship between accommodations and universal design stands.

Professional Development

“The issue of universal design in assessment should not be confined to the special education community but must be disseminated to the larger education constituencies within schools and school districts.”

–Irene Spero

Online assessment offers the potential for quick turnaround of data that can be used to immediately impact instruction. Unfortunately, some states leading the way in this innovation were not meeting the needs of students with disabilities. They are now retrofitting their online assessments for better access for these students. For example, one state originally presented text on screen as a graphic, in order to provide a higher level of security than text-based questions offer. However, it was found that the graphics could not be read by text readers or clearly enlarged for students with visual disabilities.

Why are states retrofitting for disability access rather than considering these needs from the outset? Awareness, time, and money, agree the panelists. But other forces are at work as well. Van Kuren of the Council for Exceptional Children (CEC) points to person power:

Even though awareness of universally designed assessments is growing, only a relatively few

individuals know how to create assessments using universal design. The issue goes all the way back to ensuring the questions asked are truly measuring what is being assessed.

Similarly, Sparks observes that the process can require “expertise outside of the state’s current development coordinators.” All panelists mention a need for far-reaching professional development. Assessment people need to learn more about universal design and the needs of students with disabilities. Teachers need to learn about universal design and assessment, including, in Spero’s words, “the basic elements of psychometric theory, validity, reliability, etc.” School teams that create and implement Individual Education Plans (IEPs) for students with disabilities must continually update their knowledge of changing accommodations and alternative assessments.

Acknowledging that, as Spero writes, “professional development opportunities of this order will be complex and costly,” the group supports a train-the-trainer model for distributing information and establishing local experts. Virginia’s model of creating community experts particularly catches their attention.

Flexibility: What Universal Design in Assessment Looks Like

“The question becomes whether we want to play a numbers game or truly help students achieve. Already we are seeing that one-size-fits-all, high-stakes assessments are not working.”

–Lynda Van Kuren

All assessment begins with a clear definition of the construct being measured, and universal design of assessment begins here as well. From here, agree panelists, it immediately branches out—not necessarily to a novel test format but to flexibility in how students express their mastery of standards. The panel hopes not so much for assessment vehicles accessible via accommodations but for assessment systems that allow for a variety of learning styles and abilities. “A one-size-fits-all model is not effective for students with varied ways of receiving, processing, and expressing information,” explains Spero. Hall adds,

Keeping in mind what we do know about universal design, no one structure is “best.” Individual differences, abilities, and disabilities call for assessment and instructional design that is true to the construct being measured, and offers the flexibility to access and express in the mode or methods that best suits the individual.

While multiple-choice formats can ease test scoring and reporting, some characteristics of multiple-choice testing may inhibit or distract students with disabilities. Some head injuries, for example, can inhibit decision making; thus, a student who could fill in a blank on a reading item might have more difficulty responding to a multiple-choice item. Others may be unable to manage a process of elimination, in which case the item evaluates reasoning rather than reading. Sparks observes that even with the best use of accommodations, certain assessment formats are simply not usable by some students:

If we truly embrace some essential principles of universal design, we have to accept that the standard multiple-choice format (on which many state tests are based) may not provide complete universal access for all students.

Many states have made efforts to incorporate plain language, assistive technology, more clearly defined constructs and measures, legibility in online structuring, and other universal design principles into current online assessment systems. This means that for test developers, many of these issues have been raised and considered on the top end with item writers and graphic artists. For many states, universal design has been discussed and implemented at many stages of the assessment development continuum. However, for those students needing alternatives to multiple-choice formats or extensive multisensory based items, these efforts may still fall short of providing universal design.

“I believe the power of the IEP team to structure a student’s program should extend to assisting in structuring how a student demonstrates his or her knowledge,” adds Sparks. He suggests that, rather than responding to a series of multiple-choice questions to demonstrate knowledge of, say, President John F. Kennedy, perhaps a student could discuss Kennedy at length, incorporating essential knowledge and understandings. Given a fictional scenario with an unlimited budget, Sparks observes that the discussion could be digitally captured and sent via webcast to a scoring company.

Van Kuren identifies alternative assessments based on standards as an early form of the desired flexibility:

States are developing alternative tests or giving out-of-level tests to some students and developing alternative high school diplomas to meet the needs of students who don’t fit the standard mold. As Dan Reschly, chair of the department of special education at Vanderbilt, said, “Administering tests to students who can’t answer any of the items is a waste of time as well as inhumane.”

Questions of Validity and Reliability

“It is often difficult to explain and justify why universal design principles will help all students and still maintain levels of validity, reliability, and item constructs.”

–Nathan Sparks

Taken to an extreme, such flexibility could create a situation in which every student considers every possible alternative or accommodation for assessment. For example, an average student might want to incorporate technology-based tools that support augmented memory, if memory is not the construct being tested. Picture a wearable, highly personalized computer in a wireless environment that quickly searches books and articles the student has read, essays she has written, and conversations she has participated in on a specific topic.

Given this extreme for rhetorical purposes, the panel unanimously expresses that they are not prepared to hand complete control of test formats and use of accommodations to students. Decisions for assessment format and accommodations are, they maintain, the province of educational teams. Asked if we should allow every student the accommodations they deem best, Van Kuren replies, “No. The purpose of accommodations is to level the playing field, not to give students an extra advantage. . . . Even students with disabilities are not given ‘carte blanche’ concerning accommodations.”

The response is motivated primarily by the need to balance flexibility with reliability and validity. Flexibility, in the panelists’ experiences, tends to be viewed as the antithesis of reliability and validity by assessment professionals. Accommodations, our best current example of flexibility in assessment, certainly call these psychometric guideposts into question. Every accommodation, be it a different format for the question, a different environment to avoid distractions, or a human reader, introduces an unknown element for the meaning of the aggregate information. On the other hand, every missed or mismatched accommodation, in Sparks’ words, “results in scores that do not represent learner knowledge.”

This complicated dance, like universal design for assessment itself, is just beginning. Van Kuren, for example, reconsiders her response to opening the flood gates of accommodations.

As I was driving home, another thought kept niggling. . . . As long as we are bound by the constraints of standardized assessments as they are given today, “accommodations” will need to be restricted to students with disabilities to level the playing field, as I mentioned before.

However, the better system would be one in which all students can use their best reporting mode when being assessed on their mastery of standards. That holds the promise of each student truly being able to show their knowledge and the skills they have mastered, and of providing educators with the information they need to provide appropriate instruction to each student. This type of system may take us far from standardized assessments, but that wouldn't necessarily be a bad thing!

URLS

Soapbox: www.iaete.org/soapbox/

Panelist Affiliations

Center for Applied Special Technology (CAST):
www.cast.org

Consortium for School Networking (CoSN):
www.cosn.org

Council for Exceptional Children (CEC):
www.cec.sped.org

Virginia Department of Education: www.pen.k12.va.us

For More Information

Universal Design for Learning: A Guide for Teachers and Education Professionals by the Council for Exceptional Children


This short book provides a general overview of universal design and provides background on federal legislation that supports the concept. A brief description of teaching strategies that support universal design and examples of assistive technologies that support common learning disabilities are also described. Of particular interest is the explanation of Schumm, Vaughn, and Leavell's "Planning Pyramid" as a structure for developing learning goals in an inclusive classroom.

Teaching Every Student in the Digital Age by David H. Rose and Anne Meyer with Nicole Strangman and Gabrielle Rappolt

This book from the co-directors of CAST provides a thorough explanation of universal design for learning beginning with a review of supporting brain research that is easy to read and helpful for understanding how and why students have differences in learning styles, preferences, and motivation. There is specific detail in this book about incorporating universal design for learning in the classroom and how it can support goal setting, instruction, and assessment. There are numerous examples and scenarios that help to illustrate universal design for learning in several classroom settings with diverse instructional challenges.

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This document summarizes an e-mail-based panel discussion that took place in 2005. It is part of the continuing Soapbox online forum sponsored by the Institute for the Advancement of Emerging Technologies in Education (IAETE) at AEL. The mission of the Soapbox forums is to sponsor discussion among educators, education researchers, technology industry leaders, and others interested in technology's role in advancing education. To find complete quotes in context, the discussion is posted on the Web at www.iaete.org/soapbox.

IAETE at  • P.O. Box 1348 • Charleston, WV 25325-1348 • 800-624-9120 • www.iaete.org

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