Assessment

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Access to Computer-Based Testing for Students with Disabilities
National Center on Educational Outcomes (NCEO)
Called the "next frontier in testing," computer-based testing is being promoted as the solution to many of the states' testing problems. With pressure to find more cost-effective and less labor-intensive approaches to testing, states are seeing computer-based testing as a way to address the increasingly challenging prospect of assessing all students in a state at nearly all grades.

Analyzing Results of Large-Scale Assessments to Ensure Universal Design
National Center on Educational Outcomes (NCEO)

The use of universally designed assessments is an important step forward in making tests more accessible to students with disabilities. An issue affecting universal design and assessments is the need to review potentially hundreds of individual test items to ensure that they are optimized for UDL. This paper illustrates one statistical procedure for determining whether items are producing different outcomes for students with and without disabilities. Using statistical analyses, a large statewide mathematics data set was investigated for items whose design may have differing effects for students. Results indicated that items can be flagged for further review based on either their differential impact on students across disability groups or on the type of item analysis conducted.

Considerations for the Development and Review of Universally Designed Assessments
National Center on Educational Outcomes (NCEO)

In the 2002 report titled *Universal Design Applied to Large Scale Assessments,* the authors described seven elements of universally designed assessments. This report describes the development of a "considerations of universally designed assessments" form based on Thompson et al.'s original elements. Guidelines are provided for test developers to consider when designing assessments. This report provides the authors' original list of considerations, and then describes a validation process whereby assessment and content-area experts participated in a Delphi study, which yielded expert consensus on some considerations and disagreement on others.

Improving Validity of Large-Scale Tests: Universal Design and Student Performance
National Center on Educational Outcomes (NCEO)

This paper reports the theoretical background and research results of a study conducted using Universal Design of assessment features. A sample of 231 sixth-grade students from traditionally underperforming schools and populations took two tests (groups were randomly assigned to order of tests taken). One test (traditionally designed) was drawn from released large-scale assessment items and presented in standard format. The second test was created using the constructs of the traditionally designed test, but included features of Universal Design elements, as explained by the authors of *Universal Design Applied to Large Scale Assessments* (2002). One-to-one correspondence of item constructs was determined by a content area

expert. Results demonstrated that students scored significantly higher on the universally designed test. Post-test interview data confirmed that students perceived that they scored higher on the universally designed test and preferred Universal Design features. Findings have implications for the validity of testing students with disabilities and English language learners.

Maximizing the Effectiveness of Online Accountability Assessments for Students with Disabilities
Appalachia Educational Laboratory at Edvantis

This article discusses the effectiveness of using universal design principles to enhance student online assessment. The article reviews the challenges faced by converting tests from being paper-based to being computer-based and what the Appalachia Educational Laboratory at Edvantis and the Council of Chief State School Officers are doing to incorporate universal design principles into online assessments for students.

A State Guide to the Development of Universally Designed Assessments
National Center on Educational Outcomes (NCEO)

This guide gives states strategies for designing tests through "conceptualization and item construction, field-testing, item reviews, statewide operationalization, and evaluation." The purpose of this guide is to help educators develop tests that provide precise measures of student knowledge and skills and that capture the diversity of the public school student population. This guide also has an online supplement, the Universal Design Online Manual, available at www.nceo.info/UDmanual/.

Universal Design Applied to Large-Scale Assessments
National Center on Educational Outcomes (NCEO)

The purpose of this paper is to explore the development of Universal Design for Learning (UDL) and to consider its application to large-scale assessments. Building on universal design principles presented by the Center for Universal Design (1997), seven elements of universally designed assessments are identified and described. In addition, numerous resources relevant to each of the elements are identified, with specific suggestions for ways in which assessments can be designed to meet the needs of the widest range of students possible.

Universal Design Online Manual
National Center on Educational Outcomes (NCEO)

This online manual is a supplemental guide to *A State Guide to the Development of Universally Designed Assessments*. The manual provides seven research-based steps for states to create universally designed assessments, applicable to both paper- and computer-based assessments.

Universally Designed Assessments: Better Tests for Everyone!
National Center on Educational Outcomes (NCEO)

The goal of applying universal design principles to assessments is to be able to design and develop assessments that allow participation of the widest range of students and result in valid inferences about their performance. This paper describes universal design as it applies to assessment. The paper also describes the seven elements of universally designed assessments.

Using Computer-based Tests with Students with Disabilities
National Center on Educational Outcomes (NCEO)

Computer-based testing has been called the "next frontier in testing" as educators, testing companies, and state departments of education quickly work to transform paper and pencil tests into technology-based formats. While computer-based testing may address the challenges of *the No Child Left Behind Act* and has many other positive characteristics, it potentially creates other problems unless a thoughtful and systematic process is used to transfer existing paper and pencil assessments to computer-based assessments. Challenges may present themselves that reduce the validity of the assessment results and possibly exclude some groups of students from assessment participation. This paper presents factors to consider in the design of computer-based testing for all students. It also provides a process for the initial transformation of paper and pencil assessments to inclusive computer-based testing.

Using Systematic Item Selection Methods to Improve Universal Design of Assessments
National Center on Educational Outcomes (NCEO)

This report provides guidance regarding item selection, a major focus of assessments that are universally designed. There are several methods for selecting items to ensure that they optimize the characteristics of UDL. The purpose of this report is to provide an overview of these item selection methods and to suggest that a combination of the methods will produce the better result.

Using the Think Aloud Method (Cognitive Laboratory) to Evaluate Test Design for Students with Disabilities and English Language Learners
National Center on Educational Outcomes (NCEO)

This report focuses on the Think Aloud Method and used a cognitive laboratory research methodology to examine design issues in large-scale tests, based on a framework of Universal Design for Learning (UDL). There is a critical need for states to have valid information about how the design of assessments affects student performance. In this project, students with learning disabilities, students with hearing impairments, students with cognitive disabilities, English language learners, and students without disabilities were asked to "think out loud" when solving mathematical large-scale assessment items. Findings indicated that the Think Aloud Method, under certain circumstances, can successfully detect design issues.