

**I Say Potato, You Say Potahto:
An AERA Conference Discussion Paper**

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Alternate assessments developed to assess students with significant cognitive disabilities are relatively new in most states, developed for students who were not included in most large-scale assessments until Federal law mandated their participation. The requirement for states to develop these assessments first appeared in the Individuals with Disabilities Education Act Amendments of 1997 (IDEA 97). The No Child Left Behind Act of 2001 (NCLB) included the results of these assessments in its accountability requirements, and NCLB regulations clarified that students participating in alternate assessments could be held to alternate achievement standards (December 2003 Title I Regulations).

To meet Federal accountability purposes, states and testing companies have struggled to identify technically adequate and educationally sound methods of assessing this small group of students with significant cognitive disabilities. Typically, both experts in educational programming for these students and key stakeholders have advised state assessment offices in defining what the best possible outcomes of standards-based instruction should be for the students. From those definitions, states and test company partners have developed assessments to measure the outcomes for school, district, and state accountability purposes. Most states have then worked with their technical advisory committees (TAC) to discuss whether the methods meet basic standards of technical adequacy, often through review and comment on the state's technical manual for the assessment.

In the next year, state assessment systems will undergo Title I peer review to determine whether the systems meet the requirements of NCLB. Technical manuals and TAC input will be important pieces of documentation. Yet not many states or testing companies are as confident that they understand what is necessary to document these alternate assessments as they are for the general assessment. Technical experts have raised concerns that many of these approaches do not “fit” traditional models, and seem to have questionable alignment to the Joint Standards for Educational and Psychological Testing (AERA, APA, NCME, 1999). As one TAC member said after review of a proposed body of evidence approach, “This may be a fine way of looking at classroom student work for this group of students, but it isn't measurement for accountability purposes.” TAC members, and even the test company psychometricians responsible for producing technical manuals to present to the TACs, are uncomfortable with the limited tools available to understand what is occurring. And, in turn, experts in educational programming for these students and key stakeholders who have advised states on alternate assessments are baffled at what they perceive to be reluctance by measurement experts to “take these assessments (and by inference, these children) seriously.”

Purpose of this paper. In the past five years, special education and educational measurement experts have attempted to learn one another's “culture and language” as we have partnered to build assessments that measure the achievement of every student. We have struggled in our efforts. Alternate assessments of the students with significant cognitive disabilities have posed particular challenges to these partnerships.

This paper is a companion piece to a side-by-side annotated glossary of terms in measurement language for students with significant cognitive disabilities and in measurement language for students in the general assessment population. The glossary was developed through a cross-disciplinary partnership, given evidence that at times we, that is, special education and measurement experts, are using the same terms with very different connotations (Ryan, Quenemoen, & Thurlow, 2004). The glossary includes the terms population, construct domain, assessment format (tests and items), generalization/generalizability, reliability, error of measurement, validity, fairness, test administration, scoring, interpretation, and consequence and is available from the authors of this paper.

In this paper, we discuss the current status of development of alternate assessments for students with significant cognitive disabilities, how traditional approaches to technical adequacy apply to these assessments, and why we should commit to cross-disciplinary work to improve these assessments, including partnering to reconceptualize traditional measurement terms if necessary. Finally, we propose how we can work together to advance our mutual ability to build assessments that work for all students.

Current status. Since alternate assessments were first required to be operational in 2000, researchers have documented state approaches, most typically portfolio or body of evidence methods, but also including performance assessments and checklists (Thompson & Thurlow, 2001). Regardless of the approach used for alternate assessment, several steps have been identified where both technical adequacy and educational soundness must be carefully addressed. The methods used in states to extend or expand the state content standards for the purpose of aligning alternate assessments to the same academic content as the general assessments are an essential step, studied by many researchers (Browder, 2001; Browder, Flowers, Ahlgrim-Delzell, Karvonen, Spooner, & Algozzine, 2002; Kleinert & Kearns, 2001; Thompson, Quenemoen, Thurlow, & Ysseldyke, 2001; Tindal, in press). Although the academic content covered must be aligned to the same content standards as the general assessment, researchers are identifying multiple ways states are defining the constructs being measured, based on professional understanding of how this very small group of the most challenged students demonstrates successful academic learning.

Additional thoughtful development is necessary to clarify how learning in the content is shown by these students. There is not as yet consensus on a theory of learning in the academic content for these students, although states often address what state stakeholders believe about their learning through the criteria used to score alternate assessment responses or evidence (Quenemoen, Thompson, & Thurlow, 2003). These efforts build on literature defining successful outcomes for students with significant cognitive disabilities (Kleinert & Kearns, 1999; Ysseldyke & Olsen, 1997). Yet, because of the new demands of federal and state laws requiring increased technical adequacy, these efforts must result in precise definitions of what we are measuring as we look at achievement for students with the most significant (typically cognitive or multiple) disabilities (Quenemoen et al., 2003). Other researchers have begun defining how to document the validity and reliability of these assessments (Garrett, Towles, Kleinert, & Kearns 2003; Kearns & Kleinert, 1999; Turner, Baldwin, Kleinert, & Kearns, 2000; White, Garret, Kearns, Grisham-Brown, 2004), although most states have not as yet done so. Finally, there is emerging literature on standard-setting approaches that can be used for

alternate assessment in order to define what "proficient" means for accountability purposes (Arnold, 2003; Olson, Mead, & Payne, 2002; Roeber, 2002; Weiner, 2002).

Typically, a state has its assessment system TAC members, often measurement experts from universities and national centers, review proposed assessments for technical adequacy. Very few TAC members have had any previous experience or contact with the achievement of students with significant cognitive disabilities, and have struggled to understand the proposals that come to them. By contrast, many of the special education expert advisors who serve as experts to states on the academic performance of the students with significant cognitive disabilities have had limited experience with measurement for large-scale assessment and accountability purposes, and have struggled to understand the technical concerns of the TAC members. This communications challenge has limited the ability of either group—measurement expert and special education expert—to articulate key concerns and collaboratively resolve them in ways that benefit the students. Curriculum experts are overlooked in the discussion, resulting in confusion about just what is being measured. Yet, the alliance of all three partners is necessary to ensure a technically adequate and educationally sound assessment that can result in improved outcomes for these students.

How do traditional approaches to technical adequacy apply? Many writers of technical reports for general assessments attempt to align their analyses and results with the Standards for Educational and Psychological Testing (AERA, APA, NCME, 1999), particularly when there are student or school stakes requiring that the inferences drawn from the assessment be valid, reliable and fair (AERA, APA, & NCME, 1999). This is an obvious and important first step, but often not fully met. Leading measurement theorists (e.g., Cronbach, Messick), including the authors of the 1985 and 1999 standards for educational measurement, are clear that validity is the most important technical criterion for educational assessment. In order to address validity, test developers must have a clear understanding of both the target constructs and how students with significant cognitive disabilities are expected to come to know these constructs, a clear understanding of the theory of learning for these students in the academic domains (Pellegrino, Chudowsky, & Glaser 2001).

The majority of states use portfolio or other performance-based models for their alternate assessments. Over a decade ago, as performance-based assessments started to become more widely used with students in the general population, several theorists started to question and offer solutions for evaluating the technical adequacy of these “new” assessment types (e.g., Linn, Baker, & Dunbar, 1991; Messick, 1995; Moss, 1992). While not parallel, there are several analogous challenges in that validity and reliability needed some degree of reconceptualization in order to be useful for evaluating the quality of performance-based assessments. We are not suggesting that this reconceptualization has been entirely successful or complete but we believe that addressing issues in alternate assessment can help shed light on these types of concerns related to assessments for students in the general population.

Reliability is often mentioned in the same breath as validity as the other essential technical quality. In fact, a common saying in educational measurement is that “you cannot have validity without reliability.” This is certainly true from a traditional perspective, but perhaps it will be necessary to move beyond these traditional perspectives in the context of

alternate assessment. In a recent special issue of *Educational Measurement: Issues and Practices*, the authors offered approaches for reconceptualizing traditional measurement criteria so they can be useful for evaluating the quality of classroom assessment system. In particular, Jeffrey Smith (2003) suggested that reliability might be more helpful for evaluating classroom assessment systems if thought of as sufficiency. Again, this is an analogous problem faced by those charged with evaluating the technical adequacy of alternate assessment systems and is similar to the technical challenges raised by the use of performance-based assessments (Linn & Burton, 1994). Students are not presented with a single multiple-choice test where a simple reliability coefficient can be computed quite easily. Most alternate assessment systems include relatively few open-ended tasks that are often tailored to the individual student. This type of system is not what traditional reliability methods were designed to measure. Some states report inter-rater reliability statistics as one indicator of reliability for alternate assessments. Although reporting the consistency of scoring processes is valuable, reporting inter-rater agreement statistics as if they are reliability coefficients is misleading. We need to conceptualize traditional reliability criteria so that they make sense given the unique features of alternate assessments.

Why should we do this? IDEA 97 required that states (and districts) develop alternate assessments to ensure all students with disabilities could show what they know in the “general curriculum,” in the context of standards-based reform. The Title I reauthorization in 1994 (IASA) had formalized the standards-based reform efforts of the previous decade by requiring that states define what knowledge and skills all children should know and be able to do, and to assess the performance of all children on that content. For the first time in many states, education stakeholders had to come to consensus on what the results of good teaching and learning should be for students, and to define publicly the parameters of the “general curriculum.” The shift had dramatic effect on how to measure student achievement. Large-scale assessment theory and practice developed as a means to sort and select examinees along a common “ability” continuum (Shepard, 2000). Students were believed to be distributed along a normal distribution and tests were designed to help fulfill this assumption (Shepard, 2000). The criterion-referenced testing movement and the current iteration of standards-based reform have changed the assumptions – now tests have to measure student achievement against *a priori* criteria and schools are being held accountable to ensure that all students reach these pre-established standards (NCLB, 2001).

As states began rethinking their approach in this new criterion-referenced environment, they were also grappling with another implication of both IASA 1994 and IDEA 1997: all students were to be assessed. Our understanding of large-scale assessment over the twentieth century had been built around the principle of standardized administration, standardized tasks, and standardized scoring. Measurement methodology was built to fit the standardized world, and many students with disabilities didn’t fit that world. The historical exclusion rates of students with disabilities from large-scale assessment are well documented (McGrew, Thurlow, & Spiegel, 1993; Shriner & Thurlow, 1993; Thurlow, Wiley, & Bielinski, 2003). The traditional emphasis on standardization as essential for ensuring the technical adequacy of large-scale assessments is part of the reason these students were excluded. Historic low expectations for achievement for students with disabilities also contributed to the exclusion of these students and to the acceptance of—even insistence on—their exclusion (McGrew & Evans,

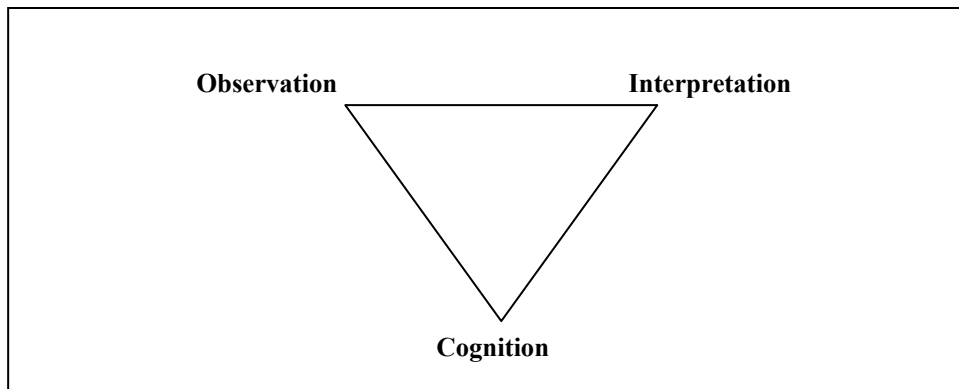
2004).

The flurry of concern about the effect of accommodations on assessment results evidenced in lawsuits in Indiana, Oregon, California, and now Alaska is one example of the aftermath of the inclusion of all children in standards-based instruction and in large-scale assessment of that instruction. This is playing out in legal arenas as well as educational ones (see, for example, Disability Rights Advocates, 2001). The push to develop understanding of “universally designed assessments” (Johnstone, 2003; Thompson, Johnstone, & Thurlow, 2002; Thompson, Thurlow, & Malouf, in press), which are cited in the NCLB Regulations, is also an example of the aftermath of the inclusion of students with disabilities in standards-based assessments.

There are pressures on traditional measurement models that have left measurement theorists and practitioners in a challenging situation, with measurement assumptions that don’t seem to ‘fit’ as well as they once did (Quenemoen & Marion, 2002). The option of removing students “who do not fit” from the population to resolve the dilemma is no longer an option. Assessments must fit all students, not the other way around.

There is a larger discussion occurring on whether current models of large-scale assessment appropriately reflect what we understand about what good teaching and learning looks like, and how students evidence that learning. (Pellegrino et al., 2001). Pellegrino et al. defined three pillars on which every assessment must rest: “a model of how students represent knowledge and develop competence in the subject domain, tasks or situations that allow one to observe students’ performance, and an interpretation method for drawing inferences from the performance evidence thus obtained.” (p. 2). They suggest that these three pillars make up an “assessment triangle,” and that this triangle—cognition, observation, and interpretation—must be articulated, aligned, and coherent in order for inferences drawn from the assessment to have integrity. They posit that it is the theory of learning—cognition—that is the “cornerstone” of the assessment design process. Figure 1 shows the triangle resting on the foundation of cognition, and building out to the observations and interpretation.

Figure 1: The assessment triangle (Pellegrino et al., 2001)



These authors suggest that as society is expecting more of traditional large-scale

assessments and requiring multiple uses of test results, we need to invest time and thought into improving how we “know what students know.” This can improve all forms of assessment in varying contexts and for varying purpose, whether classroom formative assessment or large-scale school accountability assessments. It provides an opportunity to ensure that assessment design processes build on understanding of how all students learn. It also requires attention to the need to understand if one learning theory fits all or whether some groups of students may represent knowledge and develop competence in the domain in somewhat or even dramatically different ways.

It is impossible to overestimate the challenge of rethinking a century of large-scale assessment tradition, along with the added complexity of rethinking how students learn and then show knowledge and skills in the content domains. By addressing the possibilities of new ways of thinking about knowing what students know for a group of children who have never been included in large-scale assessment for any purpose (e.g., students with the most significant cognitive disabilities), we believe we will be able to take a fresh look at where our traditions and conventions serve us well, and where they may not. By stepping away from what has become convention for general assessment, looking at the needs of a new population, we will discover hidden assumptions and issues in how we have been doing business all along, and define new directions to take us into the future.

Is this effort worth it? Given our apparent need to have a side-by-side glossary of assessment terms to translate our language in order to understand the issues, is it possible to work together to define new directions to take us into the future? And can we work together in ways that help us reconceptualize how all assessments can be improved?

A proposal for how we can work together to advance our mutual ability to build assessments that work for all students. The assessment triangle described by the NRC Committee on the Foundations of Assessment (Pellegrino et al., 2001) and discussed above can guide our work. Yet the Committee points out that “it is unlikely that the insights gained from current or new knowledge about cognition, learning, and measurement will be sufficient by themselves to bring about transformations in assessment... research and practice need to be connected more directly through the building of a cumulative knowledge base that serves both sets of interests” (p. 294).

To that end, Pellegrino et al. (2001) suggest that interdisciplinary partners from multiple communities should use the Committee’s conceptual scheme and language as a framework to guide improvement of current assessment materials, designs, and practices on the basis of existing knowledge. Simultaneously, these research and practice partnerships can yield new knowledge of how to conceptualize and operationalize assessments that result in more valid and fair inferences about student achievement in all areas of the school curriculum, for all children.

In working with cross-disciplinary research and practice partners thus far, we have identified essential research questions that include:

- Who are the learners who take alternate assessments? How does the type and size of the population vary in terms of learner characteristics, available response repertoires, and

complex medical conditions? How do the variations of who the learners are affect the assessment triangle, and ultimately technical adequacy studies?

- What does the literature say about how students in this population learn? How do current theories of learning for learners in the typical population apply to this population of students? How does this learning theory articulate with the assessment design, and ultimately with technical adequacy studies?
- How is technical adequacy defined? What is meant by reliability, validity? How do the traditional definitions of reliability/validity apply to alternate assessments? How do we define reliability and validity for different types of alternate assessments?
- What are the technical adequacy issues in alternate assessments that can not be resolved with the current knowledge-base in large-scale assessment? What strategies can be used to resolve the issues?
- What consequential validity issues (intended/unintended consequences) challenge the foundational assumptions in an alternate assessment? What is the relationship between foundational assumptions of alternate assessments and technical adequacy issues?
- What lessons learned from this study need to be addressed for the general assessment as well?

An essential first step in achieving this objective is to define the learners who take alternate assessments, and determine how these patterns differ across states. Students who typically participate in alternate assessments challenge the assessment triangle in that cognition in students from this population can only be observed through limited response repertoires. The type and size of the population is important from a technical adequacy point of view because within this one percent as defined in Title I Regulation (*Federal Register*, December 9, 2003) exists a highly variable population in terms of learner characteristics, available response repertoires, and often competing complex medical conditions.

Since the inception of alternate assessments a decade ago, the description of the population of students deemed eligible for alternate assessments ranged from students with severe and profound disabilities to some students with moderate disabilities. In most cases, these students represent less than 1% of the total population assessed in a large-scale assessment. For example, Kentucky (which has the longest history and most stable participation rate), assesses .8% of the total population; of those only about .4% of the scores would count as proficient. However, with the Title I one percent rule, the population may become broader and even more diverse. This is particularly true in states that have more than one alternate assessment; in 2003, eleven states indicated that they had multiple alternate assessments (Thompson & Thurlow, 2003). In these cases, it is likely that the type of learner will overlap in the various alternate assessments.

Second, it is essential to build consensus on a theory of learning in the academic content domains for alternate assessment participants. The literature on academic content learning for this population is limited and varied. As a field, we have not as yet grappled with a theory of learning in the academic content areas for these children, that is, what patterns of growth they show on the path to competence. Yet, these discussions have implications for content alignment and content extension discussions, discussions on assessment methods, scoring criteria, scoring processes, and standard-setting methods.

Finally, we need to step out of our specializations and think together about these challenges. In Appendix A, we provide a draft technical manual table of contents for alternate assessment of students with significant cognitive disabilities. Over the next five years, we hope to refine, change, or expand on our understanding of what would go into these chapters, develop understanding on how it differs from or improves upon current practice in documentation of large-scale general assessments, and ultimately build consensus on the criteria that can be used to judge technical quality of all assessments. We need all the partners at the table, learning each other's languages, and improving how we know what *all* students know.

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Appendix A. Draft Technical Manual Table of Contents

Recommendations for Alternate Assessments on Alternate Achievement Standards

The technical manual for any large-scale assessment provides information about the technical quality of assessments. The manuals typically include information on how the assessment was developed, administered, scored, and reported, as well as additional detail about any technical studies done on the completed assessment. The technical manual is an essential piece of evidence states can use to demonstrate the adequacy of their assessment system for Title I purposes.

A technical manual for alternate assessment on alternate achievement standards should have the following components.

Section I—Assessment Development

A. Overview

- Principles guiding development
- Partners and process guiding development
- Research base on desired outcomes for this population
- Documentation of process and result of state expansion/extension of the state content standards to ensure strong basis in literacy and numeracy
- Pros and cons of alternative methods considered
- Description of selected approach

B. Test Development

- Protocol for alignment to grade level content standards
- Development of draft assessment protocol
- Pilot test design and results
- Field test design and results

C. Test blueprint

- English Language Arts content specifications (see construct discussion above)
- Mathematics content specifications
- Other (e.g., Science) content specifications

Section II—Test Administration

A. Procedures for alternate assessment administration

- Decision-making process (participation, IEP team role)
- Local responsibility
- Timelines

B. Training

- Test oversight training for administrators
- Educator training for those working directly with students
- Ethical test administration training

Section III— Scoring and Reporting

A. Scoring design

- Quality control
- Benchmarking
- Selecting and training scorers
- Scoring activities
- Inter-scorer reliability

B. Standard-setting

- Documented and validated process used for standard setting (Full description in Appendix _)
- Performance level descriptors and exemplars for alternate achievement standards
- Distribution of performance across levels
- Comparison of performance across levels achieved in general assessment

C. Reporting design

- School/District/State Report
- Parent Letter/Individual Student Report

Section IV - Reliability and Validity; Other Technical Considerations

A. Summary of studies for reliability, available data

B. Summary of studies for validity, available data

- Face validity studies
- Concurrent validity studies
- Consequential validity studies

C. Other technical considerations

Section V—Appendices

Appendix A Documentation of development principles, partners, process, research base

Appendix B Documentation of training provided, attendance, quality control

Appendix C Documentation of scoring protocols, process, quality control

Appendix D Formal evaluation data if available

Appendix E Standard setting report

Appendix F References