Designing from the Ground Floor

Alternate Assessment on Alternate Achievement Standards

Access and Alignment to Grade-level Content

Page 1

Part I: Overview

National Alternate Assessment Center

Access and Alignment to GRADE-LEVEL Content for Students with the Most Significant Cognitive Disabilities: A Training Module for Large-Scale Use

These training materials are designed to be used with a variety of stakeholder groups at the state and local level to engage in the construction of a coherent and effective system of instruction and assessment for students with the most significant cognitive disabilities. While this trainer package has been prepared for state-level technical assistance providers, the workshop is targeted for general and special education teachers, measurement and curriculum experts, and parents who are involved in the design and development of alternate assessments on alternate achievement standards for students with the most significant cognitive disabilities. The seven separate sections can be used individually for short, one-hour presentations, or sequenced together for longer workshops. The sections can be pulled apart to use in combination with other modules, in the same or different order than provided, or to stand alone to meet the unique needs of individual state-level technical assistance providers.

Training Outcomes for Access and Alignment to GRADE-LEVEL Content for Students with the most Significant Cognitive Disabilities: A Training Module for Large-Scale Use

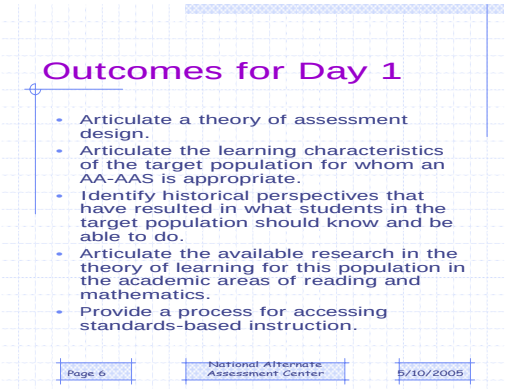
Following the complete series of presentations and workshop activities involving all seven parts, participants will be able to:

- **articulate the learning characteristics of the target population for whom an alternate assessment on alternate achievement standards is appropriate.**
- **articulate the available research in the theory of learning for this population in the academic areas of reading, mathematics, and science.**
- **identify historical perspectives that have resulted in what students in this population should know and be able to do.**
- **apply strategies for linking to grade-level content instruction.**
- **identify student work that reflects appropriate age/grade appropriate constructs in reading and mathematics.**
- **apply strategies for selecting reading and mathematics grade-level constructs and content targets to include in an alternate assessment.**

The Outcomes for Day One

These materials are designed as a train-the-trainer package. State-level technical assistance providers are encouraged to use these materials across multi-day workshops. Each module has a powerpoint presentation and accompanying narrative to guide the trainer through the presentation. Additional resources are also available with certain modules such as annotated bibliographies, participant handouts, and/or trainer handouts where appropriate. This section, prior to part one, gives trainers options to begin thinking about scheduling, materials, and how training may occur within a state.

Figure 1 outlines examples of outcomes for Day One of a multi-day workshop.



Workshop Products

As a result of using the entire set of modules, the following products should be drafted:

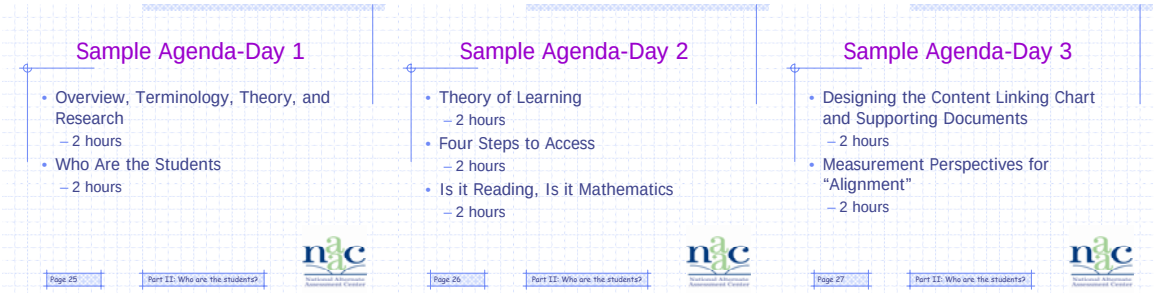
1) **sample instructional plans that are linked to grade-level content for students with the most significant cognitive disabilities**
2) **sample instructional plans that articulate the theory of Universal Design for Learning**
3) **sample Content Linking Charts for identifying appropriate age/grade level constructs and content targets in reading and mathematics**

Sample Agendas

This workshop has been compressed into a one and one-half day workshop especially designed for technical assistance specialists who are familiar with the issues and terminology in alternate assessment. As previously mentioned, individual pieces of the workshop may be used with a variety of constituencies. For example, State Assessment Technical Panels may be interested in Part II: Who Are the Students who take Alternate Assessments on Alternate Achievement Standards; Part III: Theory of Learning; and/or Part VII: Measurement Perspectives for “Alignment”.

Stakeholder groups including multiple constituencies will need up to three days and possibly a return visit to accomplish all of the outcomes. The Curriculum Maps are especially time consuming. The following sample agenda in Figure 3 is what the training might actually look like for a full three day stakeholder planning meeting.

Figure 3: Sample 3-day Agenda



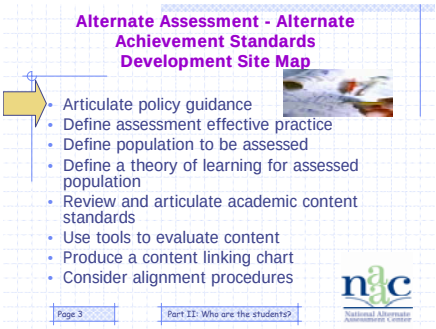
Participants & Set-up

At a minimum, special educators and content specialists in reading and mathematics at grade-bands (e.g., elementary, middle, and high school) are necessary to accomplish the work. Measurement experts, assistive technology experts, and parents of children with the most significant cognitive disabilities will also be valuable participants. In addition, it may be helpful to appoint a second, smaller team to review the work and provide feedback on the work of the stakeholder group.

The room should be set up with an overhead projector, sound system, and round tables to facilitate conversations. On day two, participants should be placed by role in groups of three to five individuals. At least two groups, one for reading and one for mathematics will be needed for each grade-band (e.g., elementary, middle, high school). More groups will be needed if additional content areas (i.e., science) are to be assessed.

Development Site Map

Figure 4: Sample Development Site Map

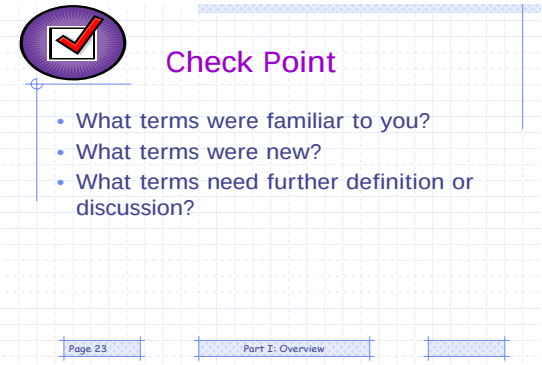


Developing and linking an alternate assessment to grade-level content involves the processes on the Development Site Map. These include: articulating policy guidance and defining effective assessment practice, defining the assessed population, reviewing and articulating academic standards for the population, using tools from measurement, designing the assessment blueprint, and verifying the design. In this workshop, we will focus primarily on the theory of learning and selecting the assessment content. The arrow indicates the areas discussed in the site map as the training progresses. It is recommended

that technical assistance providers use a large version of the site map located within the room to move participants through the training.

Check Points

Figure 5: Sample Check Point



Checkpoints have been provided throughout the entire module. These are designed for either discussion or individual reflection. If using them for discussion, allow plenty of time to accomplish the discussion (15-20 minutes) and opportunity for sharing with other groups in the room. You may want to record participant responses on chart paper or an overhead projector.

Notes

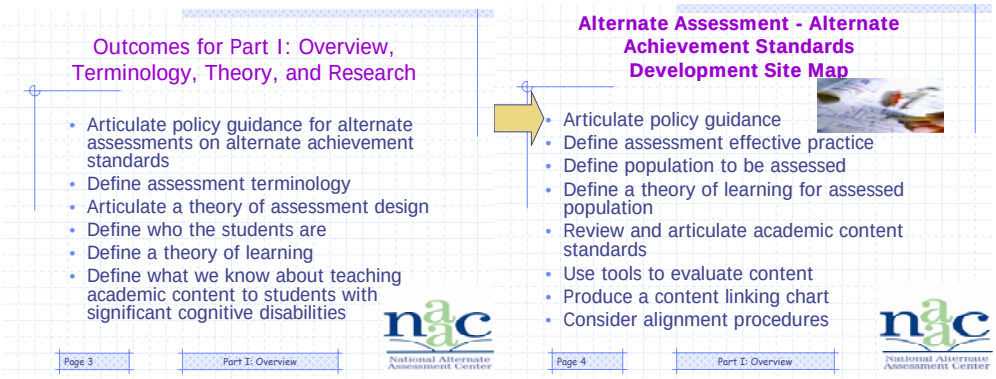
Part I: Overview, Terminology, Theory, and Research

National Alternate Assessment Center

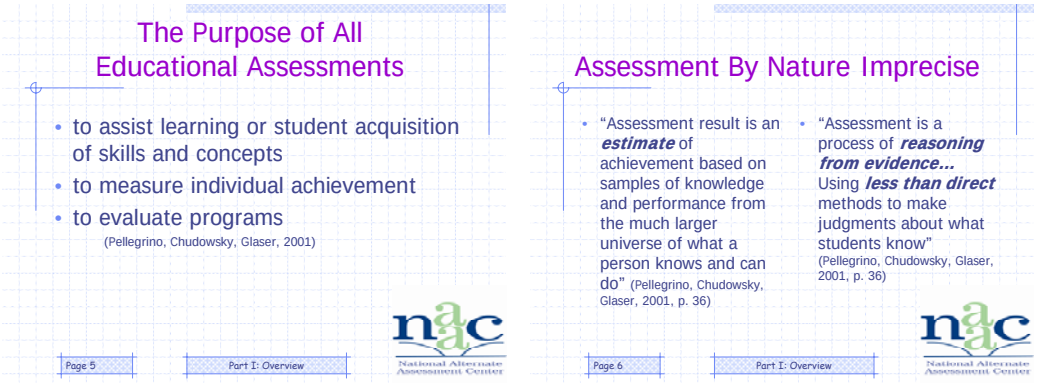
Part I: Overview, Terminology, Theory, and Research

Purpose of Part I

The purpose of Part I is to articulate principles of high quality assessment design, define a common terminology, examine theoretical principles upon which sound assessment systems can be built, and apply them to alternate assessments for students with the most significant cognitive disabilities.



Assessment Effective Practice

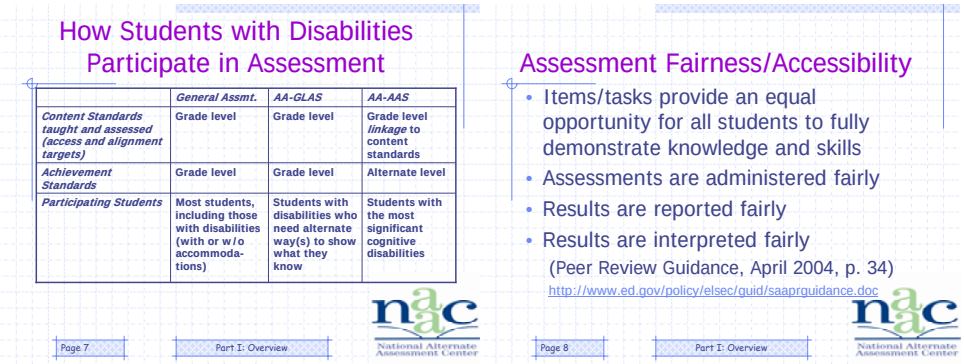


As Pellegrino, Chudowski, and Glaser (2001) remind us, educational assessment for ***all students*** may have the following purposes:

- assist learning or student acquisition of skills and concepts;
- measure individual achievement; and/or
- evaluate educational programs.

The purpose, however, of the No Child Left Behind Act of 2002 (NCLB) is the third bullet: the evaluation of educational programs. Unfortunately, when an assessment tries to accomplish multiple purposes, it generally doesn't provide high quality information for all three.

In addition, we want participants to remember that assessment by nature is imprecise, as it is at best an estimate of achievement based on samples of knowledge and performance and is a process of reasoning from evidence, using less than direct measures.



Participation & Accessibility

Students with disabilities participate in assessment and accountability systems in three ways. Most students with disabilities participate in the general assessment with or without accommodations that are aligned to grade-level content and achievement standards. Some students with disabilities may participate in assessment through an alternate assessment that is also aligned to grade-level content and achievement standards. Finally, a few students with the most significant cognitive disabilities will participate in an alternate assessment that is linked to the grade-level content standards ***and has*** different definitions of proficiency (NAAC, 2004).

We also want to make sure that ALL assessments adhere to the fairness/accessibility standards by providing opportunities to demonstrate knowledge and skills, administer assessments fairly, and to ensure results are reported and interpreted fairly.

In addition, the principles of Universal Design for Learning (UDL) also apply to alternate assessments of alternate achievement standards in that general assessments are valid and accessible for the widest array of possible users. Adherence to these principles could both reduce the need for accommodations and reduce the need for multiple alternate assessments. Universal Design as applied to alternate assessment means that consideration should be given to multiple means of expression, multiple means of representation, and multiple means of engagement.

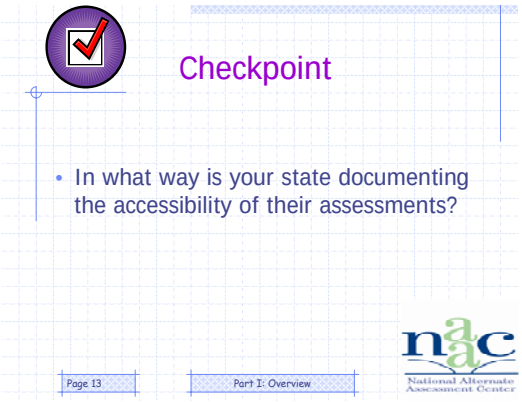
Just as in architecture, when the design from the beginning contains requirements to meet the needs of all users, thoughtful, functional, elegant design is the usual result. However, when forced to retrofit (make changes after completion of the design), the product is often less efficient, less effective, and frequently not to standard. In assessment, retrofitting solutions to accommodate students with disabilities may result in assessments that are no longer technically adequate. The validity and reliability of the measures may be compromised in retrofitting alterations. The end result, we may not be measuring what is needed, the standards, or student knowledge.

In adopting the principles of UDL when building assessments, the National Alternate Assessment Center (NAAC) will be considering student diversity from the start. In this way, those issues that interfere with measuring the intended constructs will be minimized.

UDL Principles:

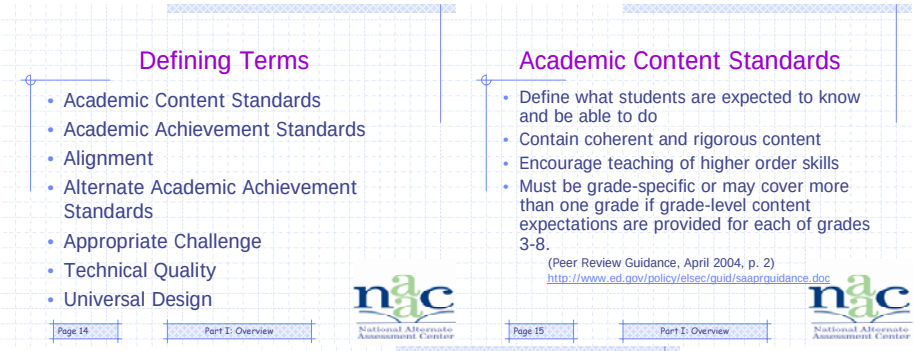
1. Provide alternative formats for presenting information (multiple or transformable accessible media). Recognition
2. Provide alternative means for action and expression (write, draw, speak, switch, graphic organizer, etc.). Strategic
3. Provide alternative means for engagement (background knowledge, options, challenge, and support). Affective

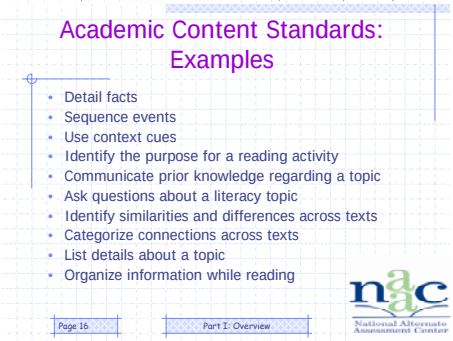
Checkpoint



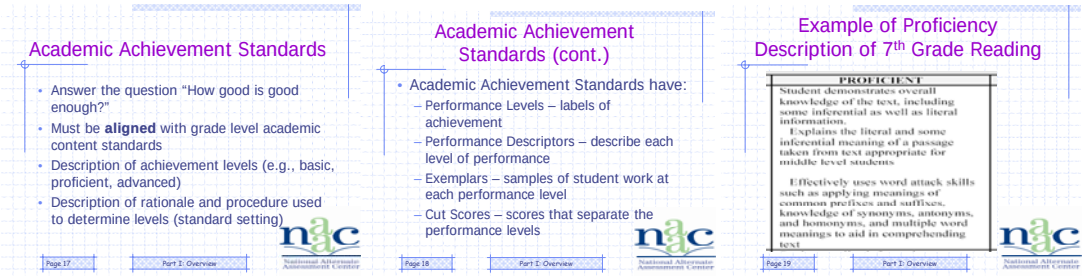
Notes

Defining Measurement Terminology

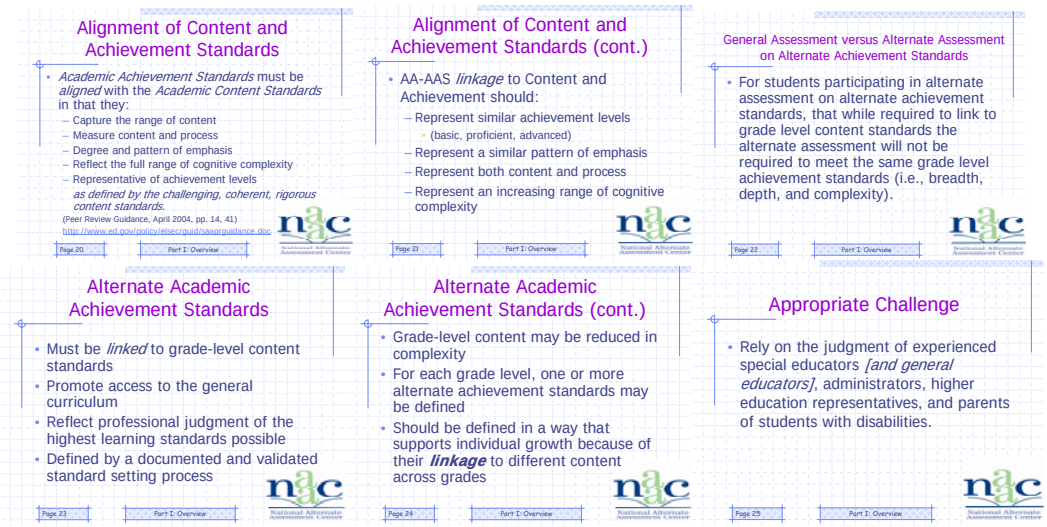




Seven key terms are discussed: academic content standards, academic achievement standards, alignment, alternate academic achievement standards, appropriate challenge, technical adequacy, and universal design. These terms are often confused and it is important to clarify the differences. Academic content standards define what students should know and be able to do and are often grade or grade/band specific for grades 3-8. An example of a content standard from mathematics is: Students will solve equations. Examples of content standards from language arts are provided. The purpose of this workshop is to assist states in defining and linking their content standards in reading and mathematics for alternate assessments on alternate achievement standards for students with the most significant cognitive disabilities to appropriate grade-level content.



Academic achievement standards are summary descriptions of ***how well*** a student should demonstrate proficiency in a content domain and is often described in at least three levels (e.g., Basic, Proficient, or Advanced). Alternate achievement standards also include descriptors of what student work reflecting the achievement looks like at basic, proficient, or advanced levels.



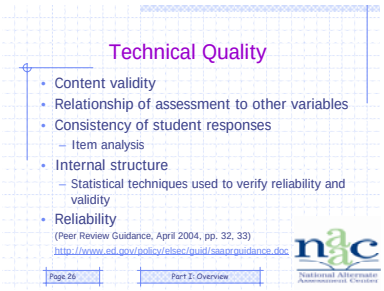
Alternate achievement standards must be linked to grade-level content in order to promote access to the general curriculum as required by IDEA 97. The key is to achieve an appropriate level of challenge as judged by experienced professionals and stakeholders who understand the learning characteristics and theory of learning around the population of learners with the most significant cognitive disabilities. The achievement standard must be defined through a documented, validated standard setting process. This may result in grade-level content that is reduced in complexity, depth, and breadth. There may be one or more alternate achievement standards. Alternate achievement standards should be linked and defined in such a way that supports individual growth across grade-levels. This workshop does **NOT** address the development of alternate achievement standards, except for developing summary descriptions of the selected content. It is important to remember for students participating in alternate assessment on alternate achievement standards, that while required to link to grade-level content standards the alternate assessment on alternate achievement standards will not be required to meet the same grade-level achievement standards in regard to breadth, depth, and complexity.

Alignment

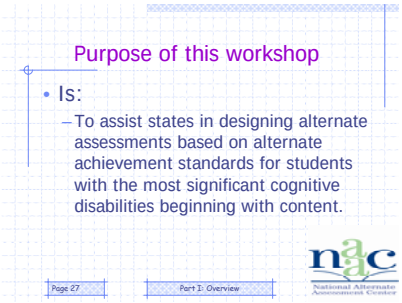
Alignment in the measurement world commonly refers to the extent to which the academic content standards are aligned to academic achievement standards in the following five characteristics: 1) range of content, 2) measurement of content and process, 3) the degree and pattern of emphasis, 4) the range of cognitive complexity and 5) representative achievement levels. Alternate assessments on alternate achievement standards for students with the most significant cognitive disabilities must be ***linked*** to content and achievement standards in that the same achievement levels must be represented, the pattern of emphasis at each grade is similar, measurement includes both content and process, and represent an increasing range of complexity. The Peer Review Guidance (USDOE, April 28, 2004) suggests that an appropriate level of challenge can be determined by relying on the judgment of a diverse stakeholder group that includes special educators, administrators, higher education representatives, and families of

students with disabilities. Effective practice would emphasize the importance of including general education and content specialists in the work group.

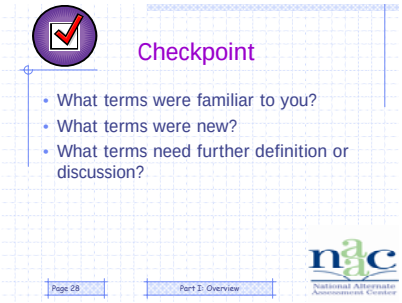
Technical Quality



Technical quality encompasses at least five elements: content validity, the relationship of the assessment to other variables, consistency of student response, internal structure, and reliability. The first step in defining technical quality of alternate assessments on alternate achievement standards is to define content validity. The purpose of this workshop is to assist states in determining the appropriate academic content for alternate assessments on alternate achievement standards for students with the most significant cognitive disabilities.

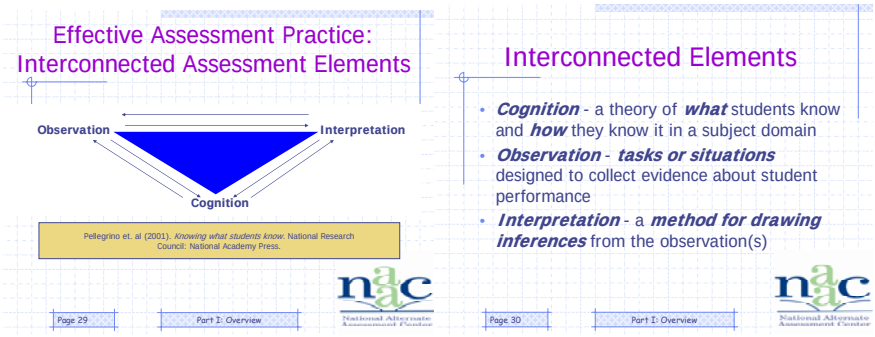


Check Point



Notes

Theoretical Foundation: The Assessment Triangle



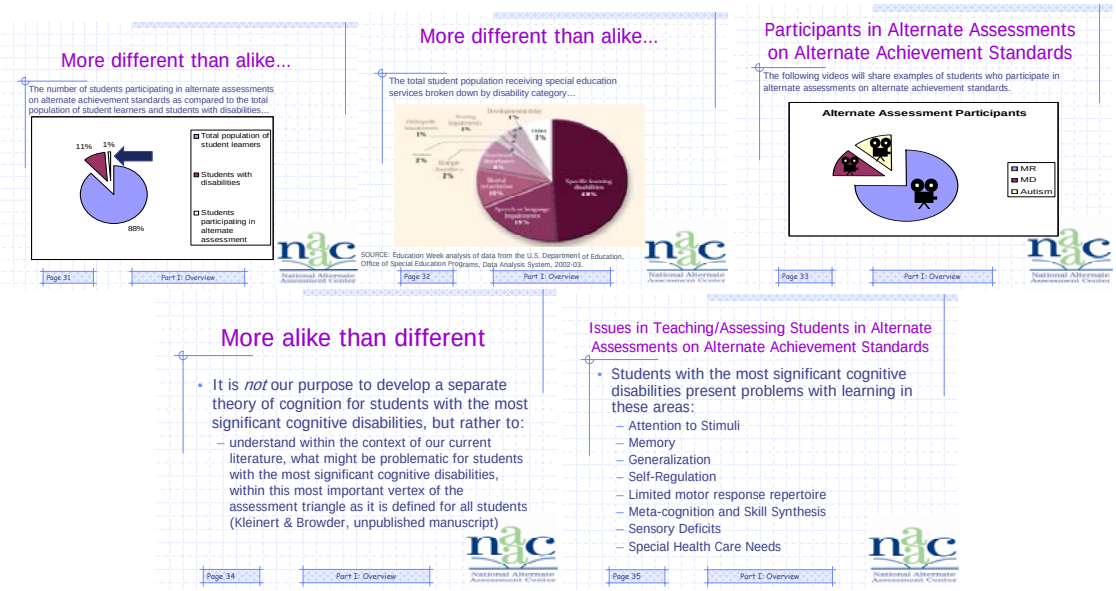
An underlying conceptual model for the work of the National Alternate Assessment Center (NAAC) is the "assessment triangle", based on the work of the National Research Council's Committee on the Foundations of Assessment (Pellegrino, Chudowsky, & Glaser, 2001). This triangle explicates the key relationships between models of student cognition, observation of student work, and the inferences we can draw from these observations about what students know. This model focuses our attention on how assessment, including large-scale educational assessments, can reflect what good teaching and learning should look like.

The assessment triangle described by Pellegrino et al. (2001) consists of: "a model of student cognition in the domain, a set of beliefs about the kinds of observations that will provide evidence of the students' competencies, and an interpretation process for making sense of the evidence" (p. 44). 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 pillars make up an *assessment triangle*, and that this triangle—cognition, observation, interpretation—must be articulated, aligned, and coherent for inferences drawn from the assessment to have integrity. For alternate assessments on alternate achievement standards for students with the most significant cognitive disabilities, we suggest that a theory of learning (cognition) of academic content has not been well articulated for this population and therefore is incomplete in the assessment design process. For this reason, we feel that it is necessary to begin this discussion on the "ground floor" starting with the cognition vertex of the assessment triangle and articulate how we know what students with the most significant cognitive disabilities know and can do in the content domains of reading and mathematics. Therefore, complete documentation of who the students are who take alternate assessments on alternate achievement standards is vitally important.

The theoretical foundation of the assessment triangle will be further addressed in Part 3: Theory of Learning. A connection between each subsequent part to a vertex or vertices will be identified so that the underlying framework of the assessment triangle can be visualized and conceptualized. The interpretation vertex does not have a primary connection to any part of the train-the-trainer module as that is not the purpose of these

particular materials and activities. However, it is important to remember that the vertices are inexorably linked and it is impossible to only address one without having any influence on the other two vertices.

Student Population for Alternate Assessment on Alternate Achievement Standards



Students with the most significant cognitive disabilities represent only about 1% of the total assessed population; however the diversity of learning within this 1% is quite variable when considering assessment strategies. We find these students are more different than alike in terms of their response capabilities and may come from a variety of special education categories. Ultimately, however, it is important to remember that these children have the same general patterns of development as other children and the assumption of competence should always be considered first.

We have provided video tape case study examples of each of these categories to assist participants in identifying the target population. The mental retardation category represents the largest category of students who use alternate assessments; however, not all students with mental retardation will require an alternate assessment. We will introduce you to Ryan and Sarah. Both Ryan and Sarah experience significant cognitive disabilities, but the differences between them represent the diversity within this population of students. Both may experience difficulty with remembering new information, generalizing new information to novel situations, or applying skills to new problems. However, Ryan and Sarah vary in their diversity of support and response needs.

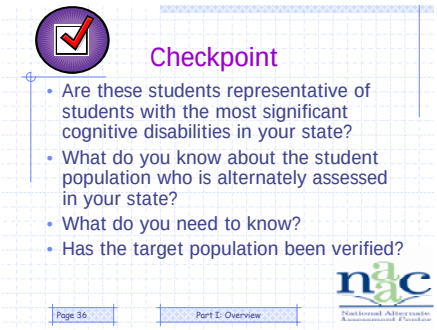
Similarly, we find participants in alternate assessment on alternate achievement standards in the category of multiple disabilities, as with the mental retardation category. However, not all students with this label will be assessed on alternate achievement standards. You will be introduced to Rhianna, Leslie, and Martha, three case study examples. All three demonstrate special health, mobility, and sensory needs. Finally, we introduce you to

Jordan, a student with autism. Again, not all children with autism will be assessed using an alternate assessment on alternate achievement standards. Students with autism experience difficulties in the following areas: attending to the salient features of a skill or concept, generalizing skills and concepts to new or novel situations, and self regulating or knowing when to use a skill or concept.

It is *not* our purpose to develop a separate theory of cognition for students with the most significant cognitive disabilities, but rather to understand within the context of our current literature, what might be problematic for students with the most significant cognitive disabilities, within this most important vertex of the assessment triangle as it is defined for all students. Without a careful consideration of these problematic issues for students with the most significant cognitive disabilities, it would not be possible to align the other dimensions of the assessment triangle (observation of student performance and interpretation of the meaning of that performance) into a coherent whole that fully gives credit to what students with the most significant disabilities can learn and do.

Generally, these students come with labels of mental retardation, multiple disabilities, and/or autism. However, they do not generally encompass the entirety of any of these categories. Specifically, students with the most significant cognitive disabilities experience difficulty in the following areas: attending to the salient features of stimuli, remembering new information, generalizing learned skills to appropriate contexts, self regulating behavior, meta-cognition, and skill synthesis. Some of these students may have limited motor response repertories, sensory deficits in both hearing and vision, and special health care needs which may limit participation in school activities.

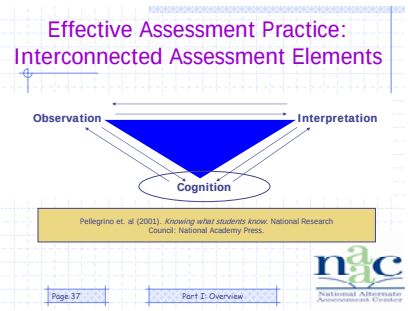
Checkpoint: Think, Pair, Share

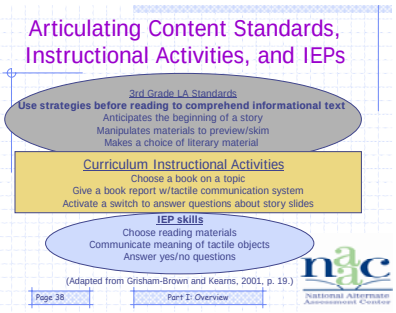


Trainer's Note: For a more extensive discussion of the learning characteristics of this population and the implications for instruction and assessment, use Part II: Who are the Students who take Alternate Assessments on Alternate Achievement Standards.

Notes

Theory of Learning for Students with the most Significant Cognitive Disabilities: Determining Competence in Academic Domains

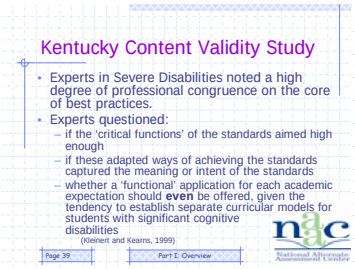


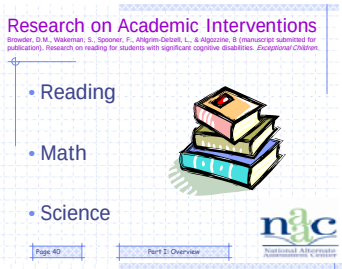


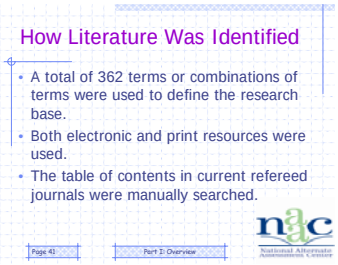
The cognition vertex of the assessment triangle includes the theory of learning or the development of competence in the content domain areas of reading, mathematics, and science.

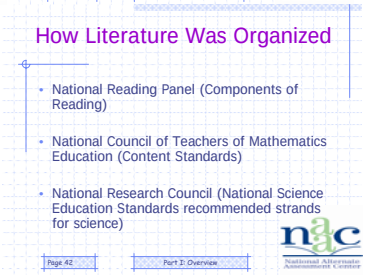
Because their learning is perceived to be so significantly different than typical children, the curriculum for students with the most significant cognitive disabilities has not traditionally focused on academic content but encompassed a separate curricular focus. Indeed, in many cases it is thought that the student's Individual Education Program or IEP is the curriculum for each individual student. While the IEP certainly represents educational priorities and supports to achieve those educational priorities for the individual student, it does not represent the entire range of curriculum; nor does it represent the academic standards upon which a curriculum should be based (Giangreco, Cloninger, Iverson, 1999; Grisham-Brown, Kearns, 2001).

Therefore, we turn to the literature to determine what areas within the domains of reading, mathematics, and science have been taught.









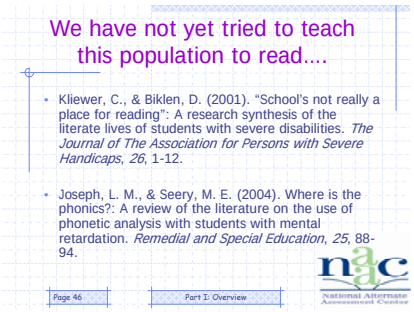
First, in a survey of experts in severe disabilities, Kleinert and Kearns (1999) found the highest degree of congruence on the core of effective practices found in the performance domain. However, even though Kentucky's alternate assessment has always had its foundation in the general curriculum standards, experts questioned whether:

- the 'critical functions' of the standards aimed high enough,
- if these adapted ways of achieving the standards captured the meaning or intent of the standards, and
- whether a 'functional' application for each academic expectation should **even** be offered, given the tendency to establish separate curricular models for students with significant cognitive disabilities.

A comprehensive literature review was conducted for empirically based research from 1975-2003 related to the instruction of students and adults with disabilities in the academic areas of reading, math, and science at UNC-Charlotte. The literature had to be published in peer-reviewed journal in English with at least one participant with diagnosis of significant cognitive disabilities (moderate, severe, mental retardation, autism, or developmental disability). The intervention in the literature had to use a recognized experimental or quasi-experimental design (including single subject designs).

Nationally recognized standards or components of the academic content areas were used to organize the literature. The National Reading Panel (2000) identified five components that make up the content of reading. These components included fluency, vocabulary, phonics, phonemic awareness, and comprehension. The National Council of Teachers of Mathematics Education began in 1989 and continued through 2005 to describe mathematical content standards around which the curriculum should be organized. Numbers and operations, algebra, geometry, measurement, and data analysis, and probability were recognized as skill areas necessary for students to be effective. Finally, in 1996, the National Research Council approved seven strands for science to help the nation's students achieve science literacy. These strands consist of science as inquiry, physical science, life science, Earth and space science, science and technology, science in personal and social perspectives, and the history and nature of science.

Reading

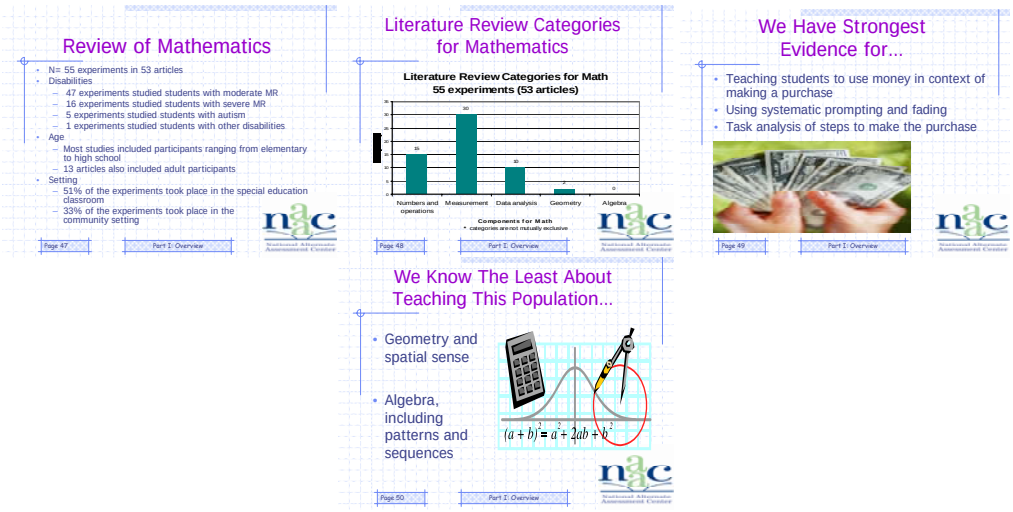


As you will see on the graphs for each slide, all data was categorized into the related academic areas for what is commonly accepted as the curricular focus. The five components of Reading, the five content standards for mathematics, and the seven strands for Science were used to identify areas of strength and weakness for instruction with students with significant disabilities. Studies were also analyzed using quality indicators identified by Gersten, et al. (2005) for experimental studies and Horner, et al. (2005) for single subject studies. As there were very few experimental studies with this population, we were unable to apply Gersten. However, we were able to apply the criteria recommended for quality within single subject research in special education (Horner et al., 2005) as there were 88 single subject design studies. Fifty-two (59%) met all criteria for quality indicators. An additional 27 (31%) had all criteria except a measure of procedural fidelity leaving only nine (10%) studies that missed two or more criteria. Of the 52 studies that met all criteria, 40 (77%) focused on sight word instruction. These 40 studies included 155 participants and were conducted in nine different geographic locations.

The teaching of sight words was included in the category of vocabulary. Fluency was less likely to be the reading of a passage and the recording of errors than it was the tracking of error rate over time for symbol identification. Comprehension may be the reading of safety signs in the community and selecting the correct gender specific restroom. Most studies related to phonics were conducted by two sets of researchers in the 1980s.

Kliewer and Biklen (2001) described the need to get past what students are perceived as being unable to do and help them become involved in literacy through adapted and modified texts, materials, and routines. Joseph and Seery (2004) conducted a literature review of empirical studies that used phonetic strategies or instruction with students with mild or moderate retardation. Outcomes demonstrated that while the process of learning to read (i.e., phonetic instruction) is not being taught to students with mental retardation, these students may benefit from direct/explicit instruction in phonic analysis.

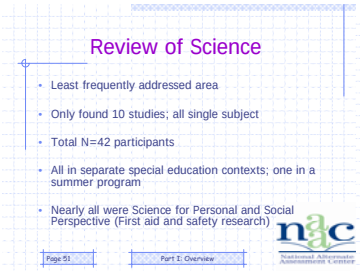
Mathematics

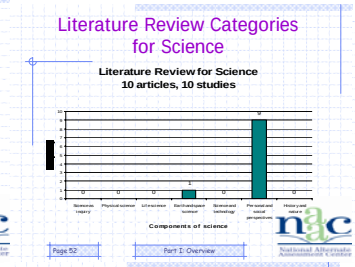


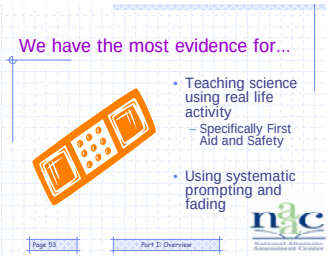
Notably, only-one third of the intervention studies were in the content area of mathematics. Experimental studies that focused on mathematics were predominately conducted with students with moderate disabilities. Over 80% of studies were either conducted in a separate classroom or in the community. This setting suggests that the type of instruction was on functional skills rather than academic content and is supported by the numbers in the graph.

Measurement included time and money. Numbers and operations included counting and number identification. Data analysis included self-graphing and self-monitoring data. Geometry was primarily the identification of shapes. There is very little about teaching students anything past shape identification. While traditionally these areas have been thought of as out of reach, extended standards and entry points created by curriculum specialists can help teachers find meaningful ways to address complex standards (e.g., understand the concepts of over/under related to spatial understanding, reading the mathematical equation of 7 > 3 to a student and providing choices for responses allows the student an opportunity to demonstrate understanding of the concept of greater than or less than).

Science



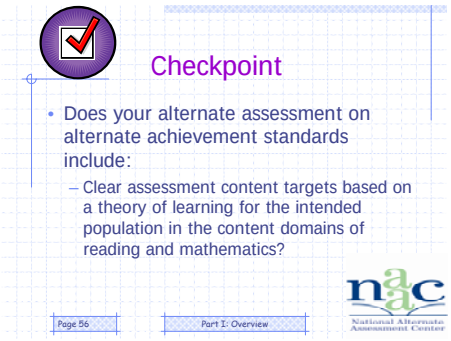




The one study for Earth and space science dealt with teaching the students about weather sight words. Most of the personal and social perspectives dealt with making correct responses or choices in safety situations (i.e., cooking, crossing the street). Information in the area of science is limited. Clearly there is a need for research in this area as the assessment of students in science is approaching. There will continue to be a need for extensive curriculum work to create appropriate, meaningful content standards for students with significant disabilities as well as a need for alignment of those standards to instruction and assessments.

The reason for this lack of definition in academic content is the lack of literature and the separate curricular philosophies encompassed within the developmental and functional eras.

Checkpoint



Trainer's Note: We will be continuing the discussion about the curricular philosophies with a planned activity in Part III. If you would like to continue the discussion of the learning characteristics of students with the most significant cognitive disabilities, go to Part II: Who are the Students who take Alternate Assessments on Alternate Achievement Standards.

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Ref. Type: Book

Notes: Book chapter

Title: Creating standards-based individualized education programs

Authors: Grisham-Brown, J. & Kearns, J. F.

Pub. Date: 2001

Source: Alternate assessment: Measuring outcomes and supports for students with disabilities

Vol, Issue:

Publisher: Baltimore, MD: Paul H. Brookes Publishing

Page #: 17-28

Keywords: alternate assessment, outcomes, disabilities

Abstract:

Participants:

Test Design:

Findings: This chapter provides an outline of a process for developing Individualized Education Programs (IEPs) that articulates the relationship of these individualized programs to the standards set for all students. The authors argue that the determination of the critical function or outcome of a particular standard represents a crucial understanding for IEP teams as they develop an IEP that moves the student within the framework of a general curriculum. Identifying supports, adaptations, and modifications increase the chances to learn because the teacher can determine appropriate opportunities for instruction and the students can respond appropriately in learning activities.

Ref. Type: Journal

Notes: Journal Article

Title: Where is the phonics? A review of the literacture on the use of phonetic analysis with students with mental retardation

Authors: Joseph, L.M., & Seery, M.E.

Pub. Date: 2004

Source: Remedial and Special Education

Vol, Issue: 25, 2

Publisher:

Page #:88-94

Keywords: Phonics, Students with Mental Retardation

Abstract

Participants:

Test Design: This is a review of studies conducted over the past 12 years on the use of phonetic analysis strategies and/or phonetics instruction with students with mild or moderate mental retardation. Seven studies were found to consist of the use of phonetic analysis (making letter-sound correspondence). No studies were found that examined the use of phonetics instruction. The purpose of the review was to examine the existing literature in this area over the past 12 years.

Findings: All studies found that students with mental retardation can learn and use phonetic-analysis strategies and/or have the potential to benefit from phonetics instruction. Further research is necessary to draw substantial conclusions, particularly regarding the effectiveness of direct/explicit phonics instruction with children with mental retardation.

Ref. Type: Journal

Notes: Journal article

Title: A validation of the performance indicators and leaner outcomes of Kentucky's alternate assessment for students with significant disabilities.

Authors: Kleinert, H. L., & Kearns, J. F.

Pub. Date: 1999

Source: The Association for Persons with Severe Handicaps

Vol, Issue: 24, 2

Publisher:

Page #: 100-110

Keywords: validation, alternate assessment, cognitive disabilities

Abstract:

Participants: A total of 44 national authorities in best practices for students with moderate and severe cognitive disabilities participated in this study.

Test Design: The purpose of this study was to conduct an expert validation of Kentucky's approach to alternate assessment for students with significant cognitive disabilities. Participants were asked to fill out a survey that asked questions about performance indicators and academic expectations for the state of Kentucky. All written comments included with the survey were typed and categorized into major themes.

Findings: Results indicated that in terms of the core of best practices embodied in the performance criteria for Kentucky's alternate assessment, there was a high degree of professional congruence. However participants also raised some concerns about the extent to which more limited learner outcomes have been identified for students with significant disabilities and whether the alternate assessment was sufficiently aligned to general curricular expectations for all students.

Ref. Type: Journal

Notes: Journal Article

Title: "School's not really a place for reading": A research synthesis of the literate lives of students with severe disabilities

Authors: Kliewer, C., & Biklen, D.

Pub. Date: 2001

Source: Journal of The Association for Persons with Severe Handicaps

Vol, Issue: 26, 1

Publisher:

Page #:1-12

Keywords: severe disabilities, literacy, social relationships, intimacy

Abstract

Participants: The research presented in this article is from 6 in depth case studies as well as biographies and autobiographies of persons with severe disabilities. The 6 individuals ranged in age from 4-16 years and were all professionally defined as severely mentally retarded.

Test Design: Researchers conducted interviews and observations in inclusive and segregated classrooms, at work sites, in homes, and in the community. Observations were focused on the students' interactions, social relationships, use of printed language, and general literacy. Analysis of the observations and interviews was ongoing.

Findings: The research suggests that persons labeled as having severe intellectual disabilities demonstrate the ability to acquire knowledge of symbols and literacy when they are in the presence of people who support them, believe in their abilities, and with whom they share an intimate relationship with. Based on these findings, the researchers suggest that the ladder to literacy be reconstructed into a web of relationships, educators work towards a more local understanding of students with severe disabilities, and that we shed the use of labels altogether for these individuals.

Ref. Type: Book

Notes: Book

Title: Advances in the sciences of thinking and learning

Authors: Pellegrino, J., Chudowsky, N., & Glaser, R., (Eds)

Pub. Date: 2001

Source: Knowing what students know: The Science and Design of Educational Assessments

Vol, Issue:

Publisher:

Page #: 59-109

Keywords: validation, alternate assessment, cognitive disabilities

Abstract:

Participants:

Test Design:

Findings: Over the past few decades, much research has been conducted in order to gain insight about how people think and learn. Specific areas that have been examined include: how knowledge is organized in the mind; how children develop conceptual understanding; how people acquire expertise in specific areas; how participation in various forms of practice shapes understanding and what happened in the physical structures of the brain during the processes of learning, storing, and retrieving information. This chapter focuses on the findings that are most relevant to assessing school learning. Four perspectives (Differential, Behaviorist, Cognitive, and Situative) are discussed in terms of their views on the process of learning. Specific topics covered in the chapter include: fundamental components of cognition; the nature of subject-matter expertise; the development of expertise; integration of models of cognition and learning with instruction and assessment; and methods of observation and inference. Throughout the chapter, information is integrated with ways of improving assessment of school learning.

Part II: Who are the Students who take Alternate Assessments on Alternate Achievement Standards?

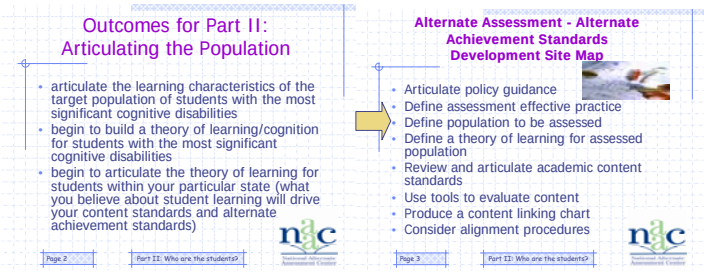
Articulating the population

National Alternate Assessment Center

Part II: Who are the Students who take Alternate Assessments on Alternate Achievement Standards

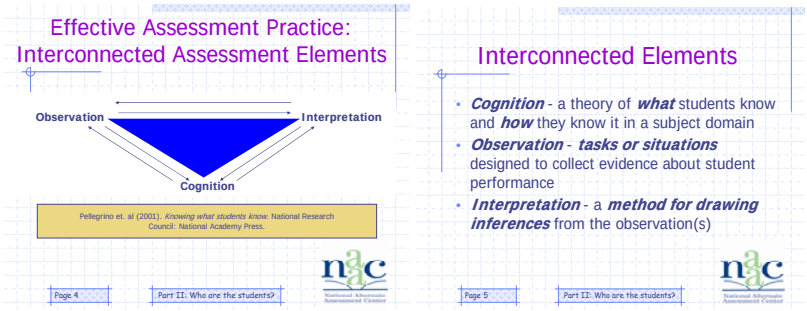
Purpose of Part II

As a result of Part II: Who are the Students who take Alternate Assessments on Alternate Achievement Standards, participants should be able to identify who will take alternate assessments on alternate achievement standards, begin to articulate the learning characteristics of this small segment of the population, and begin to build a theory of learning.



Trainer's Note: This presentation is designed to stand alone. Therefore, you will find elements of Part I: Overview, Terminology, Theory, and Research in this presentation.

Theoretical Foundation: The Assessment Triangle



An underlying conceptual model for the work of the National Alternate Assessment Center is the "assessment triangle", based on the work of the National Research Council's Committee on the Foundations of Assessment's (Pellegrino, Chudowsky, & Glaser, 2001). This triangle explicates the key relationships between models of student cognition, observation of student work, and the inferences we can draw from these observations about what students know. This model focuses our attention on how assessment, including large-scale educational assessments, can reflect what good teaching and learning should look like.

The assessment triangle described by Pellegrino et al. (2001) consists of: "a model of student cognition in the domain, a set of beliefs about the kinds of observations that will provide evidence of the students' competencies, and an interpretation process for making sense of the evidence" (p. 44). 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 pillars make up an *assessment triangle*, and that this triangle—cognition, observation, interpretation—must be articulated, aligned, and coherent for inferences drawn from the assessment to have integrity. For alternate assessments on alternate achievement standards for students with significant cognitive disabilities, we suggest that a theory of learning (cognition) in academic content has not been well articulated for this population and therefore is incomplete in the assessment design process. For this reason, we feel that it is necessary to begin this discussion of the "ground floor" with the cognition vertex of the assessment triangle and articulate how we know what students with significant cognitive disabilities know and can do in the content domains of reading and mathematics. Therefore, complete documentation of who the students are who take alternate assessments on alternate achievement standards is vitally important.

Participation

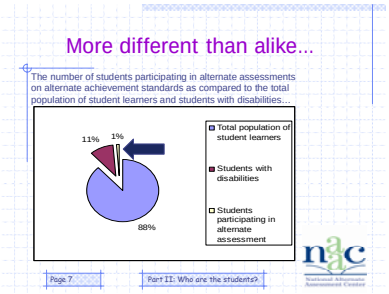
How Students with Disabilities Participate in Assessment

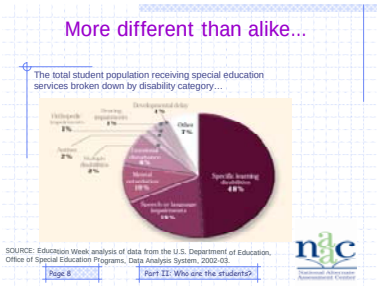
	General Assmt.	*AA-GLAS*	*AA-AAS*
Content Standards taught and assessed (access and alignment targets)	Grade level	Grade level	Grade level *linkage* to content standards
Achievement Standards	Grade level	Grade level	Alternate level
Participating Students	Most students, including those with disabilities (with or w/o accommoda-tions)	Students with disabilities who need alternate way(s) to show what they know	Students with the most significant cognitive disabilities

Page 6 Part II: Who are the students?

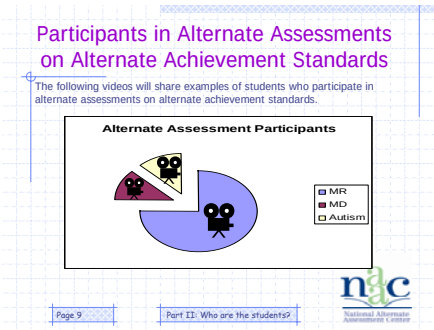
Students with disabilities participate in assessment and accountability systems in three ways. Most students with disabilities participate in the general assessment with or without accommodations that are aligned to grade-level content and achievement standards. Some students with disabilities may participate in assessment through an alternate assessment that is also aligned to grade-level content and achievement standards. Finally, a few students with the most significant cognitive disabilities will participate in an alternate assessment. These assessments must be linked to the grade-level content standards ***but may have*** different definitions of proficiency (NAAC, 2004).

Student Population for Alternate Assessment on Alternate Achievement Standards





Students with the most significant cognitive disabilities represent only about 1% of the total assessed population. However the diversity of learning within this 1% is quite variable when considering assessment strategies. We find these students are more different than alike in terms of their response capabilities and may come from a variety of special education categories.

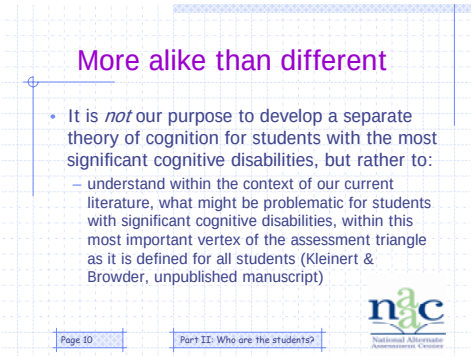


We have video taped some case study examples of each of these categories to assist participants in identifying the target population. The mental retardation category represents the largest category of students who use alternate assessments, but not all students with mental retardation will take alternate assessments. We will introduce you to Ryan and Sarah. Both Ryan and Sarah experience significant cognitive disabilities but the differences between them represent the diversity of support and response needs. Ryan and Sarah may experience difficulty with remembering new information, generalizing new information to novel situations, or applying skills to new problems.

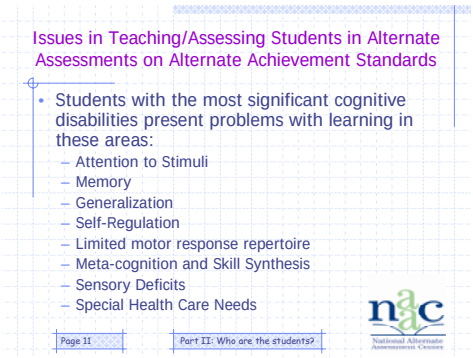
Similarly, we find participants in alternate assessment on alternate achievement standards in the category of multiple disabilities. As with the mental retardation category, not all students with a label of multiple disability will be assessed on alternate achievement standards. We will introduce you to Rhianna, Leslie, and Martha. All five students in these two disability categories have special health, mobility, and sensory needs. In addition, they also have limited response repertoires and use assistive technology to communicate.

Finally, we introduce you to Jordan, a student with autism. Again, not all children with autism will be assessed using an alternate assessment on alternate achievement standards. Students with autism experience difficulties in the following areas: attending to the

salient features of a skill or concept, generalizing skills and concepts to new or novel situations, and self regulating or knowing when to use a skill or concept.

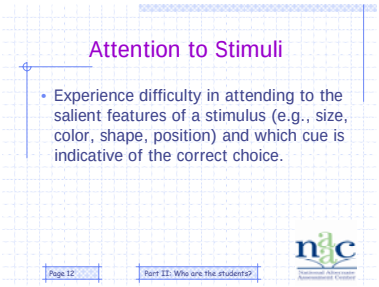


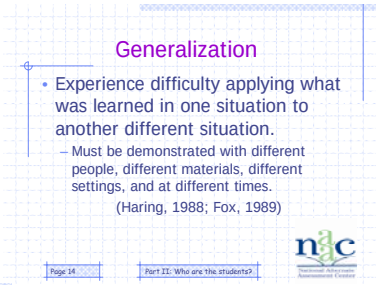
It is *not* our purpose to develop a separate theory of cognition for students with the most significant cognitive disabilities, but rather to understand within the context of our current literature, what might be problematic for students with significant cognitive disabilities, within this most important vertex of the assessment triangle as it is defined for all students. Without a careful consideration of these problematic issues for students with significant cognitive disabilities, it would not be possible to align the other dimensions of the assessment triangle (observation of student performance and interpretation of the meaning of that performance) into a coherent whole that fully gives credit for what students with significant disabilities can learn and do.



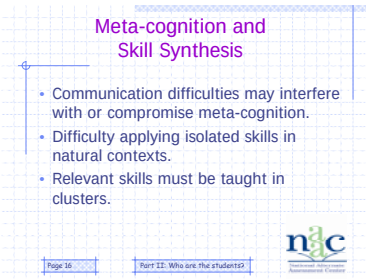
Generally speaking, these students come with labels of mental retardation, multiple disabilities, and/or autism. However, they do not generally encompass the entirety of any of these categories. Specifically, students with significant cognitive disabilities experience difficulty in the following areas: attending to the salient features of stimuli, remembering new information, generalizing learned skills to appropriate contexts, self regulating behavior, meta-cognition and skill synthesis. Some of these students may have limited motor response repertories, sensory deficits in both hearing and vision, and special health care needs which may limit participation in school activities. Ultimately, however, it is important to remember that these children have the same general patterns of development as other children and the assumption of competence should always be considered first.

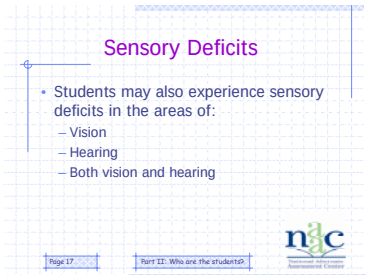
Learning Similarities and Differences

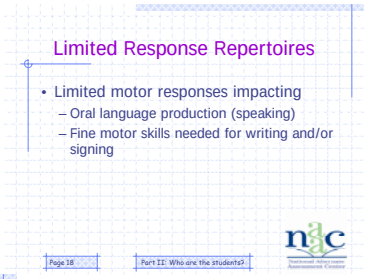


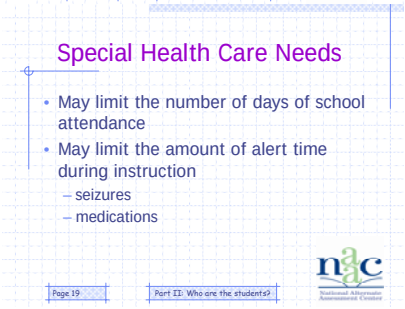


Meta-cognition is often used to understand how students are processing information. Meta-cognition is practiced to attempt to regulate one's own cognition, and maximize one's potential to think, learn, and process stimuli from the surroundings. While there is some evidence that meta-cognition can be taught, communication difficulties may interfere with or compromise meta-cognition. For skill synthesis, students with the most significant cognitive disabilities may have difficulty understanding their own thinking. Therefore, students with the most significant cognitive disabilities must then be taught relevant skills in clusters as they have difficulty applying isolated skills in natural contexts.



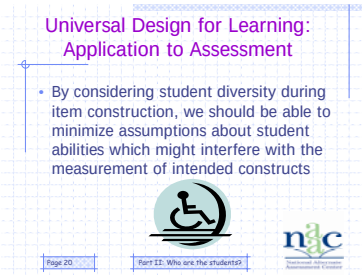


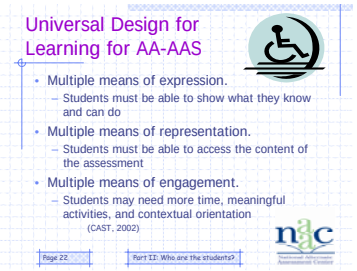




Participation & Accessibility of Assessments

We also want to make sure that ALL assessments adhere to the fairness/accessibility standards by providing opportunities to demonstrate knowledge and skills, ensure that assessments are administered fairly, and results are reported and interpreted fairly.





In addition, the principles of Universal Design for Learning (UDL) also apply to alternate assessments on alternate achievement standards in that general assessments are valid and accessible for the widest array of possible users. Adherence to these principles could both reduce the need for accommodations and reduce the need for multiple alternate assessments. Universal Design as applied to alternate assessment means that consideration should be given to multiple means of expression, multiple means of representation, and multiple means of engagement.

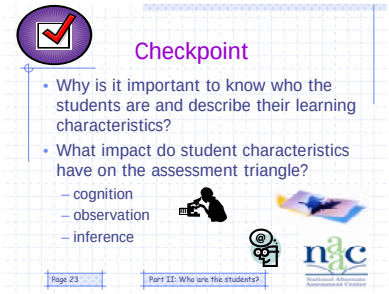
Just as in architecture, when the design from the beginning contains requirements to meet the needs of all users, thoughtful, functional, elegant design is the usual result. However, when forced to retrofit (make changes after completion of the design), the product is often less efficient, less effective, and frequently not to standard. In assessment, retrofitting solutions to accommodate students with disabilities may result in assessments that are no longer technically adequate. The validity and reliability of the measures may be compromised in retrofitting alterations. The end result, we may not be measuring what is needed, the standards, or student knowledge.

In adopting the principles of UDL when building assessments, the National Alternate Assessment Center (NAAC) will be considering student diversity from the start. In this way, those issues that interfere with measuring the intended constructs will be minimized.

UDL Principles:

1. Provide alternative formats for presenting information (multiple or transformable accessible media). Recognition
2. Provide alternative means for action and expression (write, draw, speak, switch, graphic organizer, etc.). Strategic
3. Provide alternative means for engagement (background knowledge, options, challenge, and support). Affective

Checkpoint: Think, Pair, Share



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Agran, M., Fordor-Davis, J., Moore, S., C., & Martella, (1992). Effects of peer-delivered, self instructional training on a lunch-making task for students with severe disabilities. *Education and Training in Mental Retardation, 27,* 230-240

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Kleinert, H., & Browder, D. (2005). *Implications of the "Assessment Triangle" for Students with Significant Cognitive Disabilities: The First Vertex – Models of Student Cognition.* Unpublished manuscript.

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Whitman, T. L. (1990). Self- regulation and mental retardation. *American Journal on Mental Retardation, 94,* 347-362.

U. S. Department of Education, (2002-2003). *Education Week analysis of data from the Office of Special Education Programs, Data Analysis System.*

Ref. Type: Journal

Notes: Journal article

Title: Effects of peer-delivered self- instructional training on a lunch- making work task for students with severe disabilities

Authors: Agran, M., Fodor- Davis, J., Moore, S. C., & Martella, R. C.

Pub. Date: 1992

Source: Education and Training in Mental Retardation

Vol, Issue: 27, 3

Publisher:

Page #: 230-240

Keywords: self- instructional training, peer-delivered, work performance, severely mentally retarded

Abstract:

Participants: 3 students (aged 14 -16) with moderate to severe disabilities and 2 students (aged 14 and 15) with mild mental retardation participated in the study.

Test Design: The purpose of the study was to investigate the effects of peer-delivered, self- instructional training on the work performance of students with moderate to severe disabilities. Two students with mild mental retardation (ages 14-15 years) were trained to teach the participants, 2 task-specific, self-instructions, and an interactive statement to a customer while preparing sack lunches.

Findings: 2 out of 3 students were able to make sack lunches in the correct sequence and generalized their responding across novel customers. The 3rd student was only able to increase performance with generalized responding across novel customers after picture cues were added to a self instructional training package directed by a non-peer trainer.

Ref. Type: Journal

Notes: Journal Article

Title: The critical need for non-school instruction in educational programs for students with significant disabilities

Authors: Brown, L., Nisbet, J., Ford, A., Sweet, M., Shiraga, B., York, J., & Loomis, R.

Pub. Date: 1983

Source: Journal of the Association for Persons with Severe Handicaps

Vol, Issue: 8, 3

Publisher:

Page #: 71-77

Keywords: significant cognitive disabilities, non-school instruction

Abstract

Participants:

Test Design: This is a review of educational service delivery models including a discussion of 6 learning and performance characteristics and 4 instructional location strategies. The educational implications and pros and cons of each are provided.

Findings: The thesis offered is that placing students with significant cognitive disabilities in age-appropriate classrooms is necessary, but not sufficient to prepare them for acceptable functioning in the school and community. Educators must also provide direct instruction in a wide variety of integrated and non-school environments. Decisions related to non-school environments and activities are so important that they should take precedence over the selection of skills, materials, and measurement systems.

Ref. Type: Journal

Notes: Journal article (Literature review)

Title: Stimulus generalization of skills and persons with profound mental handicaps

Authors: Fox, L.

Pub. Date: 1989

Source: Education and Training in Mental Retardation

Vol, Issue: 24

Publisher:

Page #: 219-229

Keywords: mental retardation, stimulus, generalization, mental handicaps

Abstract:

Participants:

Test Design: *(Method of review).* The purpose of the review was to review literature on research studies that have been conducted and that documented stimulus generalization skills by individuals with severe mental handicaps. Two computer searches on ERIC and PSYCHINFO and a manual search were conducted. All articles that described interventions used for the acquisition of skills with students who are profoundly mentally handicapped or severely handicapped were examined for data indicating stimulus generalization. Only those studies that clearly described the participants as severely mentally handicapped were included in the analyses. 25 studies were identified and analyzed.

Findings: Findings from this review revealed that studies that indicated successful generalization included some of the following characteristics: trained a number of exemplars, trained behaviors that are likely to be reinforced in natural settings by natural consequences, trained with stimuli common to generalization setting and trained skills that are functional. Overall the research that has been conducted seems to demonstrate that generalization may occur with certain subjects under certain conditions.

Ref. Type: Book

Notes: Book

Title: Generalization for students with severe handicaps

Authors: Haring, N. G. (Ed)

Pub. Date: 1988

Source: Generalization for students with severe handicaps

Vol, Issue:

Publisher: Seattle, WA: University of Washington Press

Page #:

Keywords: generalization skills, severe disabilities

Abstract:

Participants:

Test Design:

Findings: The book is divided in two sections. The first section consists of five chapters and provides a summary of the history of the problem of skill generalization among students with severe handicaps. Specifically, the authors present a review of the empirically based strategies that have been proposed to solve the problem. In addition they provide a discussion of the characteristics and foundations of decision rules that can be used to decide which strategies will work best in a given situation. They also describe studies that examined the effectiveness and characteristics of decision rules for generalization. Section two of the book consists of four chapters that provide a detailed guideline for practitioners in the implementation of a systematic approach to generalization. This guide includes: writing objectives for generalization, probing skill use, strategies to improve generalization and decision rules, and procedures for generalization. References are provided for most of the chapters.

Ref. Type: Journal

Notes: Journal article

Title: Teaching Persons with severe disabilities to use self-instruction in community settings: An analysis of applications

Authors: Hughes, C. & Agran, M.

Pub. Date: 1993

Source: Journal of the Association for Persons With Severe Handicaps

Vol, Issue: 18, 4

Publisher:

Page #:261-274

Keywords: severe disabilities, self- instruction, teaching

Abstract:

Participants:

Test Design: This is a review and analysis of five studies on the effects self-instructional programs on increasing the independence of individuals with moderate or severe mental retardation in integrated environments. These five studies were selected based on four criteria: (1) the study was done in a community setting, (2) participants were persons with moderate or severe mental retardation, (3) the main component of the independent variable was self instruction, and 4) the study was published in a refereed journal.

Findings: Findings showed that overall, teaching persons with severe disabilities to self-instruct to enhance acquisition, generalization, and maintenance across a variety of skills is feasible. However there were some methodological issues that need to be considered when interpreting the results of some of the studies. The authors also propose directions for future studies.

Ref. Type: Journal

Notes: Journal article

Title: Self-instructional intervention for teaching generalized problem-solving within a functional task sequence

Authors: Hughes, C., Hugo, K., & Blatt, J.

Pub. Date: 1996

Source: American Journal on Mental Retardation

Vol, Issue: 100, 6

Publisher:

Page #: 565-579

Keywords: mental retardation; problem-solving, instructional effectiveness, self-management

Abstract:

Participants: Five high school students with severe mental retardation participated in the study

Test Design: The purpose of the study was to investigate the effects of an intervention that combined self- instruction with several exampler training on the generalized problem solving of five high school students with severe mental retardation. Aspects of the intervention involved: 1) preteaching self- instruction to proficiency with one exampler before introducing multiple examplers and 2) embedding problem situations within a functional task sequence.

Findings: All students learned to perform five trained problem responses and five generalized responses while self- instructing. In addition the self-instructional intervention seemed to reduce the training time required to self instruction and to decrease the variability with which participants verbalized their self-instructions.

Ref. Type: Book

Notes: Book

Title: Teaching Students With Severe Disabilities

Authors: Westling, D. L. & Fox, L.

Pub. Date: 2004

Source: Teaching Students With Severe Disabilities (3rd ed.)

Vol, Issue:

Publisher: Columbus: Pearson, Merril

Page #:

Keywords: severe disabilities

Abstract:

Participants:

Test Design:

Findings: This book provides a link between the most current research in the area of teaching students with severe disabilities and current practice. The first section offers initial considerations of working with this population such as families, best practices, and collaboration with other professionals. The second section helps prepare teachers to teach these students. Part three offers general instruction procedures and part four provides specific instructional and management procedures. Teaching academic skills, communication skills, providing support of health and medical needs and teaching personal care skills are all covered in this section. The final part discusses special considerations such as the use of technology, and transition planning and adult issues.

Ref. Type: Journal

Notes: Journal article

Title: Self-regulation and mental retardation

Authors: Whitman, T. L.

Pub. Date: 1990

Source: American Journal on Mental Retardation

Vol, Issue: 94

Publisher:

Page #: 347-362

Keywords: mental retardation, self–control, generalization, skills

Abstract:

Participants:

Test Design:

Findings: The article investigated the education and research implications of defining mental retardation as a self- regulatory disorder. The behavioral, social-learning, and cognitive conceptualizations associated with the structure and development of self regulation was also discussed. How these conceptualizations compliment each other was emphasized. A number of views were discussed and self regulation was described as a complex skill that develops like other skills and can be taught using behavioral techniques. Self-regulation was described as a linguistically guided process. Due to the extensive language deficiencies, individuals with retardation are delayed in developing self- regulatory control. The role played by life experience and motivational processes in the development of self- regulation was also emphasized.

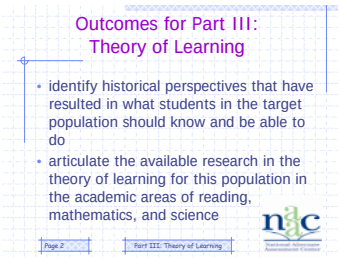
Part III: Theory of Learning

What students with the most significant cognitive disabilities should know and be able to do...

National Alternate Assessment Center

Part III: What Students with the most Significant Cognitive Disabilities Should Know and be able to do…

Purpose of Part III

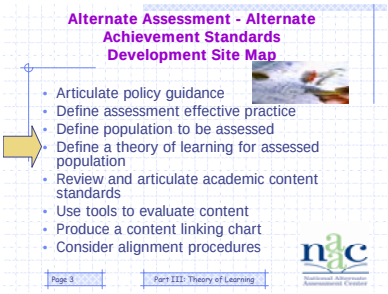


The outcomes for Part III discuss the research and curriculum history for students with the most significant cognitive disabilities. At the end of this presentation, participants should be able to:

- **articulate the available research in the theory of learning for this population in the academic areas of reading, mathematics, and science.**
- **identify historical perspectives that have resulted in what students in this population should know and be able to do.**

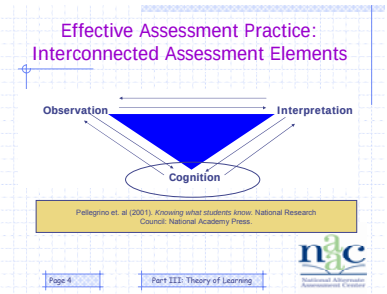
Trainer's Note: This presentation includes material from Part I: Overview, Terminology, Theory, and Research. Trainers may choose to only do this section or combine the two sections and then delete duplicate material.

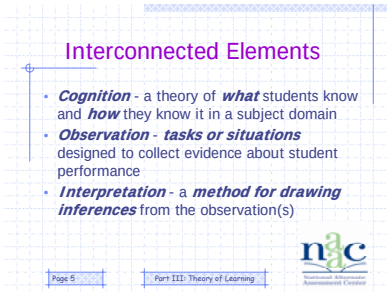
Development Site Map



Trainer's Note: Some of these slides can also be found in Part I: Overview, Terminology, Theory, and Research. The new slides begin with slides 24 and 25: Walk the Wall Activity and its introduction.

Theory of Learning for Students with the most Significant Cognitive Disabilities: Determining Competence in Academic Domains

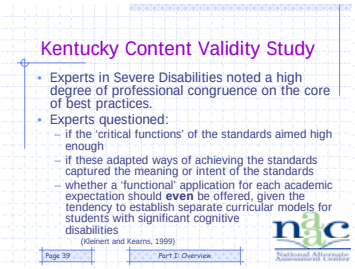


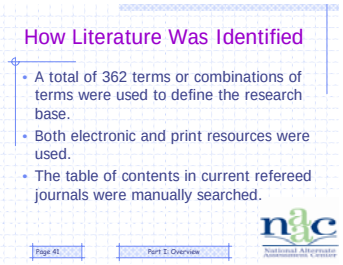


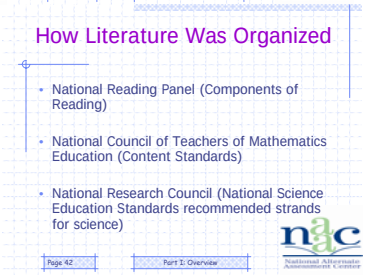
The cognition vertex of the assessment triangle includes the theory of learning or the development of competence for all students in the content domain areas of reading, mathematics, and science.

Because their learning is perceived to be so significantly different than typical children, curriculum for students with the most significant cognitive disabilities has not traditionally focused on academic content but encompassed a separate curricular focus. Indeed, in many cases it is thought that the student's Individual Education Program or IEP is the curriculum for each individual student. While the IEP certainly represents educational priorities and supports to achieve those educational priorities for the individual student, it does not represent the entire range of curriculum; nor does it represent the academic standards upon which a curriculum should be based (Giangreco, Cloninger, Iverson, 1999; Grisham-Brown, Kearns, 2001)

Therefore, we turn to the literature to determine what areas within the domains of reading, mathematics, and science have been taught.







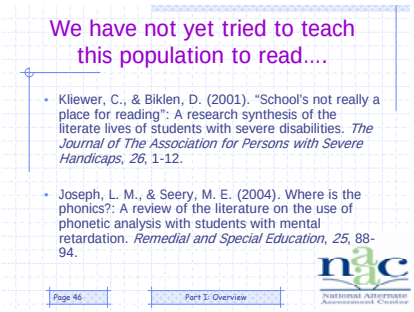
First, in a survey of experts in severe disabilities, Kleinert and Kearns (1999) found the highest degree of congruence on the core of effective practices found in the performance domain. However, even though Kentucky's alternate assessment has always had its foundation in the general curriculum standards, experts questioned whether:

- the 'critical functions' of the standards aimed high enough,
- if these adapted ways of achieving the standards captured the meaning or intent of the standards, and
- whether a 'functional' application for each academic expectation should **even** be offered, given the tendency to establish separate curricular models for students with significant cognitive disabilities.

A comprehensive literature review was conducted for empirically based research from 1975-2003 related to the instruction of students and adults with disabilities in the academic areas of reading, math, and science at UNC-Charlotte. The literature had to be published in peer-reviewed journal in English with at least one participant with diagnosis of significant cognitive disabilities (moderate, severe, mental retardation, autism, or developmental disability). The intervention in the literature had to use a recognized experimental or quasi-experimental design (including single subject designs).

Nationally recognized standards or components of the academic content areas were used to organize the literature. The National Reading Panel (2000) identified five components that make up the content of reading. These components included fluency, vocabulary, phonics, phonemic awareness, and comprehension. The National Council of Teachers of Mathematics Education began in 1989 and continued through 2005 to describe mathematical content standards around which the curriculum should be organized. Number and operations, algebra, geometry, measurement, and data analysis and probability were recognized as skill areas necessary for students to be effective. Finally, in 1996 the National Research Council approved seven strands for science to help the nation's students achieve science literacy. These strands consist of science as inquiry, physical science, life science, Earth and space science, science and technology, science in personal and social perspectives, and the history and nature of science.

Reading

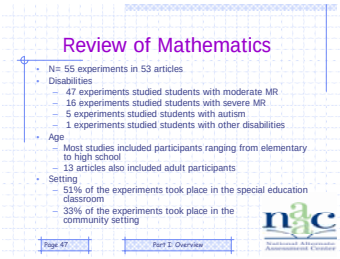


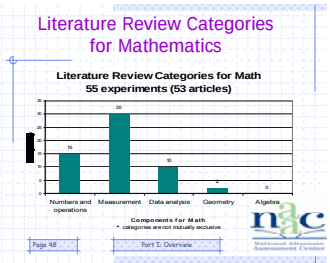
As you will see on the graphs for each slide, all data was categorized into the related academic areas for what is commonly accepted as the curricular focus. The five components of reading, the five content standards for math, and the seven strands for science were used to identify areas of strength and weakness for instruction with students with significant disabilities. Studies were also analyzed using quality indicators identified by Gersten, et al. (2005) for experimental studies and Horner, et al. (2005) for single subject studies. As there were very few experimental studies with this population, we were unable to apply Gersten. However, we were able to apply the criteria recommended for quality within single subject research in special education (Horner et al., 2005) as there were 88 single subject design studies. Fifty-two (59%) met all criteria for quality indicators. An additional 27 (31%) had all criteria except a measure of procedural fidelity leaving only 9 (10%) studies that missed two or more criteria. Of the 52 studies that met all criteria, 40 (77%) focused on sight word instruction. These 40 studies included 155 participants and were conducted in 9 different geographic locations.

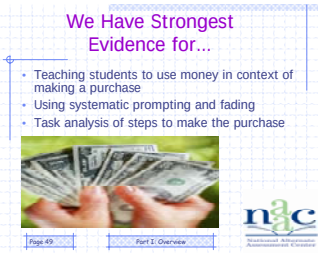
The teaching of sight words was included in the category of vocabulary. Fluency was less likely to be the reading of a passage and the recording of errors than it was the tracking of error rate over time for symbol identification. Comprehension may be the reading of safety signs in the community or selecting the correct gender specific restroom. Most studies related to phonics were conducted by two sets of researchers in the 1980s.

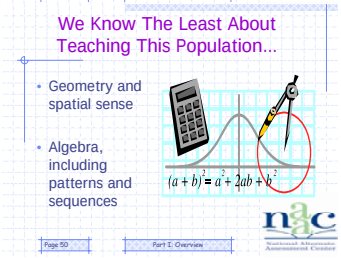
Kliewer and Biklen (2001) described the need to get past what students are perceived as being unable to do and help them become involved in literacy through adapted and modified texts, materials, and routines. Joseph and Seery (2004) conducted a literature review of empirical studies that used phonetic strategies or instruction with students with mild or moderate retardation. Outcomes demonstrated that while the process of learning to read (i.e., phonetic instruction) is not being taught to students with mental retardation, these students may benefit from direct/explicit instruction in phonic analysis.

Mathematics





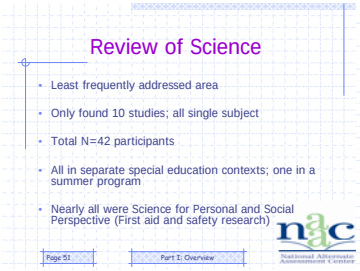


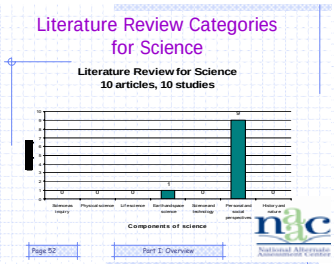


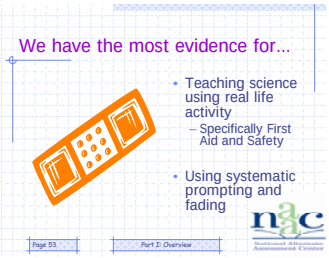
Notably, only one third of the intervention studies were in the content area of mathematics. Experimental studies that focused on math were predominately conducted with students with moderate disabilities. Over 80% of studies were either conducted in a separate classroom or in the community. This setting suggests that the type of instruction was on functional skills rather than academic content and is supported by the numbers in the graph.

Measurement included time and money. Numbers and operations included counting and number identification. Data analysis included self-graphing and self-monitoring data. Geometry was primarily the identification of shapes. There is very little about teaching students anything past shape identification. While traditionally these areas have been thought of as out of reach, extended standards and entry points created by curriculum specialists can help teachers find meaningful ways to address complex standards (e.g., understand the concepts of over/under related to spatial understanding, reading the mathematical equation of 7 > 3 to a student and providing choices for responses allows the student an opportunity to demonstrate understanding of the concept of greater than or less than).

Science



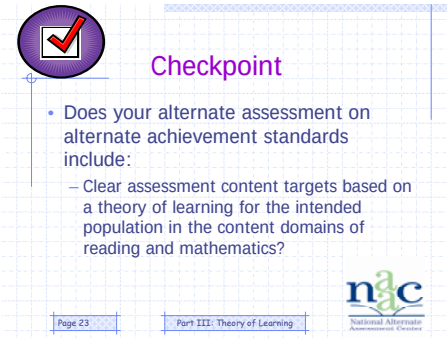




The one study for Earth and space science dealt with teaching the students about weather sight words. Most of the personal and social perspectives dealt with making correct responses or choices in safety situations (i.e., cooking, crossing the street). Information in the area of science is limited. Clearly there is a need for research in this area as the assessment of students in science is approaching. There will continue to be a need for extensive curriculum work to create appropriate, meaningful content standards for students with significant disabilities as well as a need for alignment of those standards to instruction and assessments.

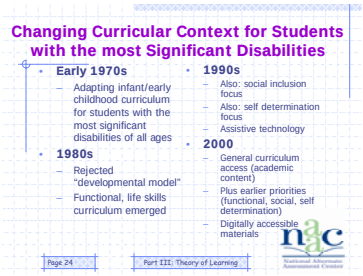
The reason for this lack of definition in academic content is the lack of literature and the separate curricular philosophies encompassed within the developmental and functional eras.

Checkpoint



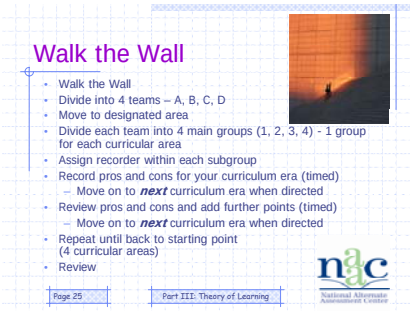
Notes

Curricular Context for Students with the most Significant Cognitive Disabilities



Trainer's Note: Once the following activity has been completed, the trainer will want to review the remaining slides to summarize this section.

Directions for Participant Activity: Walk the Wall



1. Give brief overview of each curriculum model (developmental, functional, social inclusion, general curriculum or standards based curriculum). Overview would not include timeline as all curriculum models are currently still in use nor would it include pros and cons – more just a quick explanation accompanied by what would you see if you walked into a classroom where that curriculum model was being used. (10 minutes)
2. Split into 4 groups (possibly 8 if group is large but this is a little awkward). Each group is assigned to a specific curriculum model posted on chart paper in four corners of the room.
3. Group brainstorms and lists pros and cons of their curriculum model. (5 minutes)
4. Groups move around to each other curriculum model charts and repeats activity for each. (4 minutes, 3 minutes, 2 minutes – decreasing amounts of time are given because they are building upon ideas already listed so there are less and less items to identify)
5. The groups end up at the one they started with so each group has read a "complete" pros and cons list for each model developed by the whole group. (2 minutes)

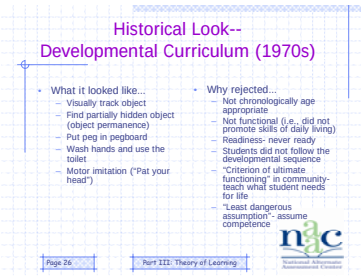
Alternative Activity: Four Corner Jigsaw

1) Participants number off at their "home groups" 1-4. The numbers represent the expert group in which they will be participating.
2) Each curriculum era has a handout for their curriculum era (i.e., 1 = 1960's Developmental Era).
3) Each curriculum era is assigned an expert group in one of the four corners of the room.
4) Participants move to their expert group.
5) Participants read, discuss, and develop a plan to teach the materials given to their group.
6) Participants return to their home groups and teach the others in the materials from their expert group.
7) Participants may use the note taking guide found on page 20.

Handouts for Jigsaw/Trainer Content

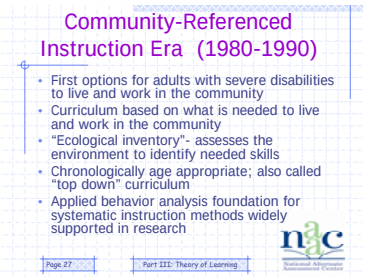
Curriculum for students with moderate and severe disabilities has evolved over the last thirty-five years since *Christmas in Purgatory* exposed the plight of children with disabilities living in institutional settings. As Blatt and Kaplan (1974) suggested, what children with moderate and severe disabilities should be taught may not be that different from what typical children are taught, and that the "specialness" of children with disabilities serves to reinforce lower expectations of achievement. Interestingly, the question of expectations and what is appropriate for children to learn again surfaced in the recent IDEA 97 and "No Child Left Behind" legislation (IDEA, 1997; NCLB, 2002). Indeed, recent research by Browder (2004) considered the question of curriculum alignment in alternate assessments. To understand today's mandate for children to "access the general curriculum", it is important to trace the evolution of curriculum for students with moderate, severe and profound disabilities and find the roots of our heritage so that we may more clearly see the possibilities in the future.

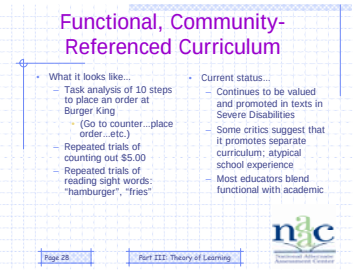
Notes



Because many children with cognitive disabilities were institutionalized in the 1970's, there was a focus on a developmental model of curriculum where children were described in terms of their developmental characteristics (i.e., 6 months of age). The predominant education theories applied to children and youth with mental retardation during this period focused on theories of learning such as developmental theory and behavioral science. Curriculum guides from this era suggested a developmental focus including these familiar areas: gross and fine motor skills, track objects, imitation, put pegs in peg boards, self help, toileting, hand washing, and some pre-academic skills such as writing name. An emphasis on task analysis as an essential element of instructional planning was the centerpiece of curriculum planning for students with disabilities. School programs that existed during this time were developed and supported by families who believed that their sons and daughters should be and could be educated.

In addition, the first research programs focused on the learning and behavior of individuals with disabilities and were authorized in the Elementary and Secondary Education Act (ESEA, 1965). The innovation during this period was the advent of what we know today as special education – confirming that indeed children with disabilities can learn. However, as children got older, the developmental model no longer seemed to make sense for a variety of reasons but most importantly because the gap between chronological age and developmental age appeared to be uneven across major life areas. For example, an adolescent playing with an infant toy reinforced the perception that the individual was only capable of skills which characterize infants. Providing only activities according to developmental milestones widened the gap in perception about what students with moderate and severe disabilities could learn and do. In addition, the developmental theme suggested that students couldn't move forward if they weren't developmentally "ready". Many of these developmentally "ready" steps would not be met at all by some children with significant cognitive disabilities.



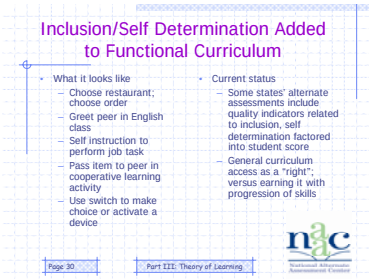


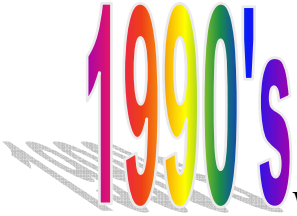
The advent of the functional curriculum in the late 70's and early 80's followed students with disabilities into the community and public schools. Functional curriculum activities addressed age-appropriate activities for high school age students regardless of developmental age and opened the doors of many regular public schools including high schools. Lou Brown (1982) and others put together the "functional curriculum model" where teaching "life skills" made sense, particularly for high school-age students. This model was useful for promoting transition services, (e.g., vocational training, community referenced instruction, recreation and leisure) especially as a large number of individuals moved from institutions into community settings.

Curriculum planning during this time emphasized the use of ecological inventories to assess the environments in which students would live and learn. Curriculum guides during this period advocated the selection of functional activities from home, school, and community domains. Task analysis again served a prominent role in the design of instruction. During this era, many students began to receive services in age-appropriate settings including high schools. The principles of partial participation emphasized the need for students to engage in the activity regardless if they could perform all the steps of the task analysis. In addition, the readiness hypothesis was called into question. We found that if students had to master a certain set of skills before they could progress to the next set, the progression often did not occur because of the perceived level of mastery. The functional curriculum model was and continues to be the most popular curricular model for students with significant cognitive disabilities.

The problem, however, with both of these models is that social and communication skills are often the most deficient and most often the reason that students were being excluded from community settings including job sites. From our experience with community-based instruction for children and youth with the most severe disabilities, we learned that even developmental skills (e.g., reach/grasp) could be effectively embedded in activities that provided both an appropriate context along with natural prompts and cues. However, some argued that a large portion of this population would still not become completely

independent in community-based situations and, therefore, this curriculum model appeared also to be inappropriate for some students. In addition, while this model worked well for high school students, there appeared to be a “push-down effect” for elementary students, where students began working on community skills in elementary school outside of their school community which again created a disparity in perceived competence between students with disabilities and their non-disabled peers. Because children were still largely segregated in self-contained classrooms; social, communication, and literacy skills still seemed to languish.



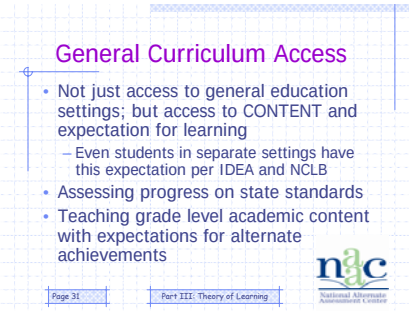


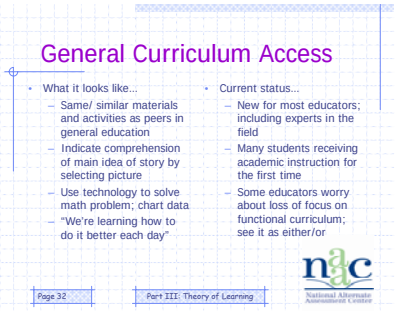
With the advent of inclusive education and community based service delivery in the late 80’s and early 90’s, we began to see students who previously exhibited serious communication and social problems now had something to communicate about and someone to receive the communication who could respond appropriately - both highly functional skills. A social justice perspective began to influence curriculum. Neighborhood schools, membership, and belonging were key words. In addition, social interactions and self determination began to emerge particularly as more students began to use communication systems. We began to recognize that the practice of embedding developmental skills that were learned in the community could also be applied to school and classroom routines and that a school day already has both functional and academic opportunities to learn. Most importantly, albeit secondarily, we found that students could learn academic content which in turn provided natural opportunities for enhancing communication and social interactions. As students acquired academic content, perceptions about their ability to learn raised important questions about our expectations for their achievement.

We learned that academic opportunities to learn are found in the explicit curriculum or the standards-based activities that provide students with rich opportunities to communicate and achieve literacy skills (math, language arts), while the implicit or hidden curriculum still provided opportunities to learn such functional tasks as negotiating classroom routines, keeping up with materials, waiting in line, using the restroom, enjoying lunch and snack time, engaging in homework, working in groups, and using the school library (all opportunities to learn "functional skills"). We found that students acquired skills at a higher rate when opportunities to learn were provided in

natural environments and distributed across the day rather than in mass trials in context free situations. Generalization of skills occurred naturally as the contexts for learning became inherently authentic.

Simultaneously, general educators were facing their own crisis with curriculum. Students with disabilities were not the only ones who needed functional application of skills. With the advent of standards-based instruction, general educators found the need to explicitly link classroom learning to real-life problems and situations. Because of the vast amount of knowledge in our digital, technological age, general education students needed to construct knowledge and engage in disciplined inquiry rather than simply memorize facts. The effective construction of knowledge necessarily required that there be some value beyond the classroom either to public problems or personal experiences (Newmann & Wehlage, 1995; Wiggins & McTighe, 1998).





The 2000 era ushered in the requirement for academic standards for all students. The reauthorization of the Elementary and Secondary Education Act (No Child Left Behind, 2002) required both achievement and grade-level content standards. This type of curricular experience provides optimal opportunities to learn both academic and functional skills for all students. Indeed, the quality of instruction in standards-based classrooms has evolved to include curricula that are universally designed and instruction that is differentiated so that the widest array of students can be accommodated in the general curriculum (Rose & Meyer, 2002). Assistive technology, too, opened the door for many students to participate meaningfully in classroom activities in more independent ways. Thus, some of the important features of standards-based, general education are increasingly becoming intertwined with what has been traditionally accepted as special education.

The Importance of Assistive Technology

Assistive Technology (AT) and the General Curriculum

The discussion of assistive technology at this point in the training is linked to general curriculum *access*. The Merriam Webster online dictionary defines *access* as the "freedom or ability to obtain or make use of," which, in this discussion, is the general curriculum. Advances in the design, function, and availability of assistive technology have increased *access* to, or increased the "freedom or ability to obtain or make use of" the general curriculum for individuals with the most significant cognitive disabilities.

We have already heard from CAST how multiple means of representation, expression, and opportunities for practice are essential to making learning accessible and meaningful to the widest array of learners. The use of assistive technology is one way to facilitate *access* to the general curriculum, and may, for many students with the most significant cognitive disabilities, be the best way to access learning.

Remembering that *access* refers to "the freedom or ability to make use of" the general curriculum, the Stepwise Process (Clayton, et al) suggests the following questions to ensure that the student is indeed able to "make use of" the general curriculum:

- *Is the student actively participating in each part of the instructional activity?* That may include reading, writing, speaking, listening, answering questions, doing research, taking tests, etc. These activities may be done in the context of different instructional formats, such as group or individual work. The focus is not upon *which* instructional activities will the student participate in, but *how*.

- *What is needed to engage the student in the instruction?* This may not require anything additional to what all students are receiving, but may be something as simple as the student having an object representative of the concept to hold while listening. The engagement should be matched to the particular learning style of the student and facilitate the acquisition of the content.

- *Does the student have a means to demonstrate the knowledge, skills, and concepts acquired?* Again, preferential learning styles should play a role here, and multiple intelligences (Gardner, 1993) should also be considered. Even though the student may be learning more complex and sophisticated ways to communicate knowledge, it may be preferable to rely on a more established means of communication so that the demonstration of new knowledge is not compounded by a "new" communication mode as well.

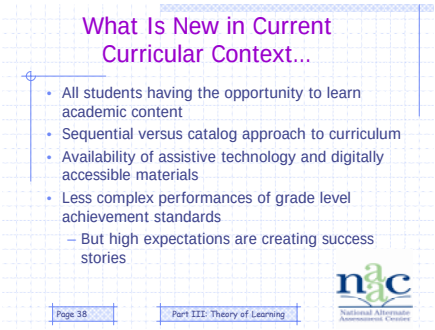
A means of communication is essential to active participation within the general curriculum, but is too often ignored, likely due to the complex nature of communication styles of students with the most significant cognitive disabilities. There are many different ways that students may develop a system – using graphics or symbols, objects, simple communication aides, or complex programmable devices such as the Dynavox. The most crucial element here is that the student has a way to communicate within the context of the class, and not be limited to basic wants and needs (drink, more, restroom, etc.).

All students are expected to read as part of general curriculum activities and this provides a challenge for individuals with the most significant cognitive disabilities as they may not have been exposed to the years of instruction and opportunities of practice afforded to their typical peers. The preceding slide illustrates several ways to actively participate in reading. It should be noted that reading is defined by varying philosophies across states, and a discussion of supports may be framed by that definition. However, the message here is that it is essential to facilitate *access* to grade level content material and this may require thinking in ways that are outside our immediate frame of reference.

Writing is also expected of all students as a means of expression, and again provides a challenge to individuals with the most significant cognitive disabilities. Think again in terms of Universal Design for Learning (UDL) and the Stepwise process discussing active participation. Individuals must be afforded a way to demonstrate what they know in a manner consistent with learning style. This may be through objects, graphics, laminated symbols and words, as well as the flexible media of digital text.

Assistive technology is developing at an unbelievable rate and is making things possible that were unheard of just a few years, months, or even days ago. It is important to check your state's resources in terms of assistive technology support – trainings for all those involved with the student, loan programs, conferences, and be sure that your state has guidelines in place for AT assessments and consideration of assistive technology through the IEP by those who are knowledgeable about devices and services.

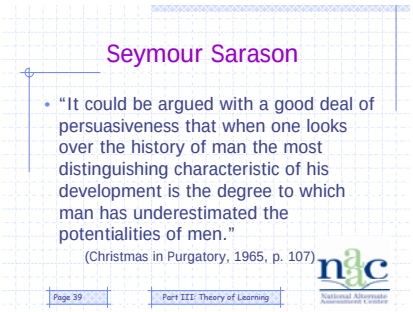
Summary



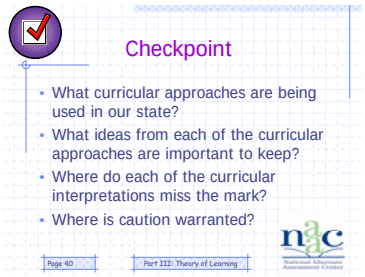
So we see that with each curriculum approach, some important learning has occurred that should guide access to the general curriculum for all students. Essentially, we need to keep the important concepts from each of the evolutionary periods:

- Developmentally appropriate practices that utilize age appropriate materials and activities while addressing students' current characteristics and emerging skills still play a part in the education of students with disabilities.
- Opportunities to learn functional skills remain a high priority for this population of students, but functional skills can, in reality, be taught most effectively within the context of natural routines using appropriate cues and consequences and there is functionality in academic skills.
- Self-determination (choice-making, goal setting) focused attention on teaching students to make choices about learning, participate in goal setting, and evaluate themselves. These skills appear to make a difference in their post school life.
- Continued efforts to refine our perception of curriculum for students with moderate, severe, and profound disabilities to include those skills, including academic, that make students more successful in current and future social, community, and work environments.

This "new" perception about curricula necessarily includes academic/cultural knowledge for functioning in a social situation, engaging in social conversations, increasing receptive understanding, and fostering individual interests. Our society places a high value on academic knowledge and skills, therefore, without attention to this aspect of learning, students with cognitive disabilities again face a future of lowered expectations and lower results.



As the keeper of memory, we must remember our history so that we understand our present condition and continue to improve results for students with disabilities. As Dr. Seymour Sarason (1965, p. 107) pointed out thirty-five years ago, "It could be argued with a good deal of persuasiveness that when one looks over the history of man the most distinguishing characteristic of his development is the degree to which man has underestimated the potentialities of men."



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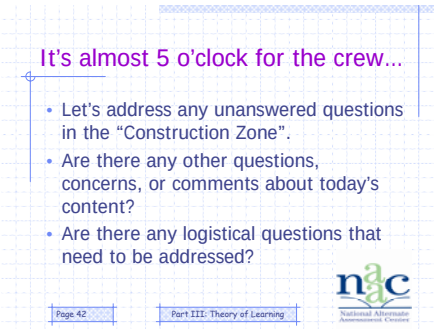

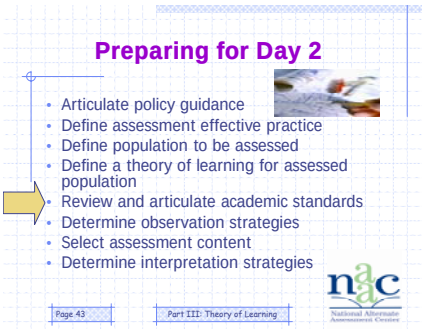

Team Reflection

1) **What did we learn today that represented an "Aha Moment"?**

2) **What was most familiar to us?**

3) **How was our thinking challenged?**

4) **What are our next steps with this information?**

5) Note Taking Guide for Curriculum Eras

1970's	1980's
1990's	2000

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Ref. Type: Journal

Notes: Journal Article

Title: Where is the phonics? A review of the literature on the use of phonetic analysis with students with mental retardation

Authors: Joseph, L.M., & Seery, M.E.

Pub. Date: 2004

Source: Remedial and Special Education

Vol, Issue: 25, 2

Publisher:

Page #:88-94

Keywords: Phonics, Students with Mental Retardation

Abstract

Participants:

Test Design: This is a review of studies conducted over the past 12 years on the use of phonetic analysis strategies and/or phonetics instruction with students with mild or moderate mental retardation. Seven studies were found to consist of the use of phonetic analysis (making letter-sound correspondence). No studies were found that examined the use of phonetics instruction. The purpose of the review was to examine the existing literature in this area over the past 12 years.

Findings: All studies found that students with mental retardation can learn and use phonetic-analysis strategies and/or have the potential to benefit from phonetics instruction. Further research is necessary to draw substantial conclusions, particularly regarding the effectiveness of direct/explicit phonics instruction with children with mental retardation.

Ref. Type: Journal

Notes: Journal article

Title: A validation of the performance indicators and leaner outcomes of Kentucky's alternate assessment for students with significant disabilities.

Authors: Kleinert, H. L., & Kearns, J. F.

Pub. Date: 1999

Source: The Association for Persons with Severe Handicaps

Vol, Issue: 24, 2

Publisher:

Page #:100-110

Keywords: validation, alternate assessment, cognitive disabilities

Abstract:

Participants: A total of 44 national authorities in best practices for students with moderate and severe cognitive disabilities participated in this study.

Test Design: The purpose of this study was to conduct an expert validation of Kentucky's approach to alternate assessment for students with significant cognitive disabilities. Participants were asked to fill out a survey that asked questions about performance indicators and academic expectations for the state of Kentucky. All written comments included with the survey were typed and categorized into major themes.

Findings: Results indicated that in terms of the core of best practices embodied in the performance criteria for Kentucky's alternate assessment, there was a high degree of professional congruence. However participants also raised some concerns about the extent to which more limited learner outcomes have been identified for students with significant disabilities and whether the alternate assessment was sufficiently aligned to general curricular expectations for all students.

Ref. Type: Journal

Notes: Journal Article

Title: "School's not really a place for reading": A research synthesis of the literate lives of students with severe disabilities

Authors: Kliewer, C., & Biklen, D.

Pub. Date: 2001

Source: Journal of The Association for Persons with Severe Handicaps

Vol, Issue: 26, 1

Publisher:

Page #:1-12

Keywords: severe disabilities, literacy, social relationships, intimacy

Abstract

Participants: The research presented in this article is from 6 in depth case studies as well as biographies and autobiographies of persons with severe disabilities. The 6 individuals ranged in age from 4-16 years and were all professionally defined as severely mentally retarded.

Test Design: Researchers conducted interviews and observations in inclusive and segregated classrooms, at work sites, in homes, and in the community. Observations were focused on the students' interactions, social relationships, use of printed language, and general literacy. Analysis of the observations and interviews was ongoing.

Findings: The research suggests that persons labeled as having severe intellectual disabilities demonstrate the ability to acquire knowledge of symbols and literacy when they are in the presence of people who support them, believe in their abilities, and with whom they share an intimate relationship with. Based on these findings, the researchers suggest that the ladder to literacy be reconstructed into a web of relationships, educators work towards a more local understanding of students with severe disabilities, and that we shed the use of labels altogether for these individuals.

Stepwise Process to Access Grade Level Content Standards and Curriculum

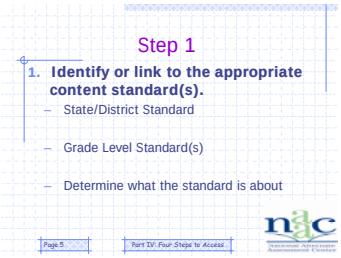
Trainer's Packet

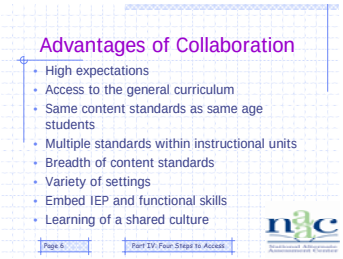
Developed by
Jean Clayton, Mike Burdge, Anne Denham, and Jacqui Kearns
Inclusive Large Scale Standards and Assessment
University of Kentucky
2005

Stepwise Process to Access Grade Level Content Standards and Curriculum

As many educators struggle with how to effectively teach and help students with significant cognitive disabilities progress in the general curriculum, it may be beneficial to follow a stepwise process that keeps the focus on learning. Four steps included in a process described by Kearns, Burdge, and Kleinert (Innovations, in press) is an effective process for accessing the general curriculum. This stepwise process provides broad concepts which offer educators a practical approach to accessing the general curriculum and has been developed to be used at a classroom level in planning for instructional units. As educators increasingly provide students more meaningful access to the general curriculum to achieve grade level content standards, more detail may be added to the steps to further refine the process. This process may be helpful to adapt for use at a systems level as well; however, it should be noted that as written, it is primarily meant to guide instruction at an individual student level.

This section deals primarily with the observation vertex of the assessment triangle as the learning activities have been designed not only to teach the construct(s) of the standard(s) but also to provide opportunities for students to demonstrate their understanding and skill regarding the standard through performances. These performances can result in assessment evidence. A secondary connection to the cognition vertex may be made as the student performances are directly connected to what they should know and be able to do – the standard(s).





Activities Introduction

Characteristics of adult learning reinforce the necessity of providing ample opportunities for processing before information can be successfully transferred into long term memory and subsequently into the working memory. Because of this, we have provided several activities which will facilitate this transfer for participants.

Throughout the packet, activities which allow training participants to process information in small chunks are set aside in text boxes. The activities are developed to allow trainers to tailor the training to the training time requirements and needs of the participants. In general, all **a.** activities are very short; **b.** activities take more time; **c.** activities take the most time but allow participants greater opportunities to work through issues which, in the long run, will facilitate the knowledge and skill transfer most effectively.

The activities can be implemented with a mix-and-match approach. For instance, a trainer might, considering training time and participant need, elect to choose **Activity 1.b**, **Activity 2.c**, **Activity 3.b**, and **Activity 4.a**. rather than all **b**. activities.

Step 1 – Identify or link to the appropriate standard

It is important to first identify the grade level content standard towards which instruction will be geared. For schools and districts which have aligned their curricula to standards, this will already be in place. Following the lesson plans of the same grade level general education class in such schools and districts will ensure that this connection is in place. However, in initially learning how standards, curriculum, and instruction are linked, it is helpful to locate the standard that the lesson plan addresses. Lessons planned specifically to address Individual Education Program (IEP) objectives or planned with the alternate assessment in mind typically do not first start with the grade level standard, but instead an instructional activity is developed and retro-linked or linked back to the standard which will lessen the impact on learning. The selection of the standard *first* is essential and leads to the authentic “standards-based” instruction.

Once the broad standard and the specific grade level content standard are identified, it is then helpful to determine what the grade level standard is all about - what is the most basic concept that the standard defines. Familiar special education terms for this concept include "critical function", "essence", or "intent." Grant Wiggins and Jay McTighe use the phrase "enduring understanding" and state this "represents a big idea having enduring value beyond the classroom." (1998, pp. 10-11).

While it may appear that the general education lesson plan precedes the selection of standards, in actuality the general education teacher has almost always chosen the activity to meet a grade level content standard. While keeping up with the pace of a general education curriculum may appear difficult for students who traditionally require more time to process information, there are numerous advantages for following these lesson plans for the students with the most significant cognitive disabilities:

- Setting high expectations for the students in terms of content acquisition

- Ensuring access to the general curriculum
- Providing direct instruction on the same content standards as all students of the same age and grade are learning
- Providing ongoing opportunities to learn each standard throughout the school year, since standards are often taught across multiple units of instruction within and across content areas throughout the school year
- Addressing a variety of standards throughout the school year
- Working in a variety of settings
- Embedding IEP skills in instructional activities
- Working on functional skills that occur in the routines that these activities require
- Providing learning of a shared culture

Having students with significant cognitive disabilities work on content standards in the general education class produces the following additional advantages:

- Allowing meaningful, active participation in general education classes
- Working with peers
- Offering opportunities to build friendships/relationships

Experts in the field of moderate to severe disabilities emphasize that academic instructional goals should be selected from the general curriculum and activities. Of course, students with disabilities may have other more "functional" needs as well; IDEA 2004 reinforces that these other functional needs of students must be addressed. However, functional skills should not be taught in an "alternative curriculum" (Jackson, Ryndak, & Billingsley. 2000), but rather in the context of the general education curriculum whenever possible.

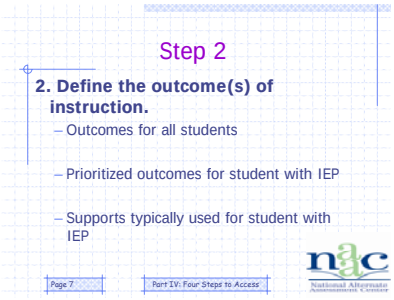
To develop and instruct curricula outside of the general curriculum and activities would not only be incongruous with IDEA 2004, but also cumbersome. Selecting a standard that would address an IEP skill and then creating individualized lesson plans to meet the standard requires a different lesson plan for each student and often misses critical instructional elements. With such an approach, the special education teacher has to create lesson plans, as well as develop supports, for each student, thus making this method more time consuming while still not providing learning opportunities within the "hidden curriculum", nor maybe even the "explicit curriculum" which all other students receive.

Likewise, selecting a standard that will meet the requirements of an alternate assessment and developing corresponding lessons makes the assessment a separate event from ongoing instruction, and makes that assessment an artificial rather than authentic task. On the other hand, having the student work within the general curriculum throughout the year on a variety of standards affords the student a wide range of opportunities to learn and generalize the key concepts of the grade level content standards.

Activity 1 (after Step 1 introduction)

- **a.** Spend 2 minutes discussing in small groups benefits and challenges in moving to standards based instruction for this group of students. **(3 minutes)**
- **b.** Spend 5 minutes discussing in small groups benefits and challenges in moving to standards based instruction for this group of students. Identify 1 major hope and 1 major fear from the table and report these out to the large group. Chart these and post. **(10 minutes)**
- **c.** Have participants write with marker on large index cards their personal hopes and fears. Round robin these and post on chart paper, grouping similar points together. Come to a consensus on how the groupings look and find a blanket statement that addresses the topic of each grouping. **(20 minutes)**

Step 2 - Define the outcome of instruction for all students



This step specifies the instructional unit and identifies the learning outcomes specific to that unit – what is it that the teacher wants all students to learn. Referring to the unit objectives for all students maintains focus on the desired outcomes of instruction and may facilitate a prioritization of outcomes for the student with disabilities. A casual conversation with the general education teacher will often get at desired outcomes for an instructional unit that can then be adjusted and prioritized to meet the needs of the student with disabilities. This step should not be confused with the identification of the standard(s), but rather represents what the achievement of the standard will look like.

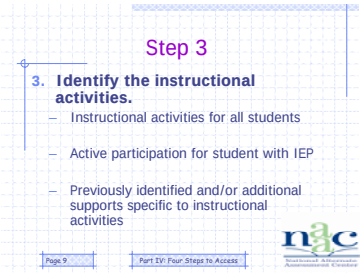
Once the teacher or educational team has identified what concepts, skills, and specific knowledge all students are meant to acquire, a prioritized subset might be selected for the student with disabilities. If the set of outcomes is very complex, lengthy, or highly specialized, it may be helpful to reduce the complexity of what is required for the student with disabilities. This may be as simple as prioritizing a reduced number of skills/concepts to systematically teach the student. This should not serve to limit the participation in the instructional activities (which open up opportunities to learn additional skills/concepts/ knowledge), but should serve to focus instruction and monitoring on the selected skills/concepts.

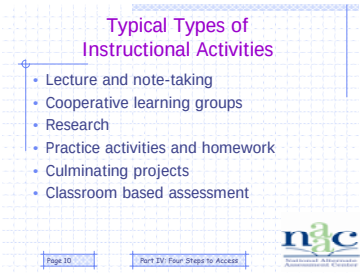
After selecting the targeted skills/concepts for the student, it is essential to identify potential barriers and missed opportunities that may be created by the interaction between the instructional environment (methods and materials) and student characteristics (strengths, interests and weaknesses) (CAST, 2002). Potential barriers may also be found in the physical arrangement of the classroom, the level of supports available to the student or staff, and inappropriate level of challenge (Zabala, 1996). These barriers and possible solutions may be addressed within the student's IEP through a description of the student's present level of performance and supports that are typically in place for the student (e.g., instructional, behavioral, and assistive technology). Both barriers and solutions will be discussed in more detail (Step 3, Identify the instructional activities) as the instructional activities designed to teach the grade-level standard are introduced. Considering both the supports already identified for the student and the desired learning outcomes will help in identifying the appropriate supports for the planned instructional activities. Decisions on specific assistive technology tools should be made once the learning environment and tasks are determined (Zabala, 1996).

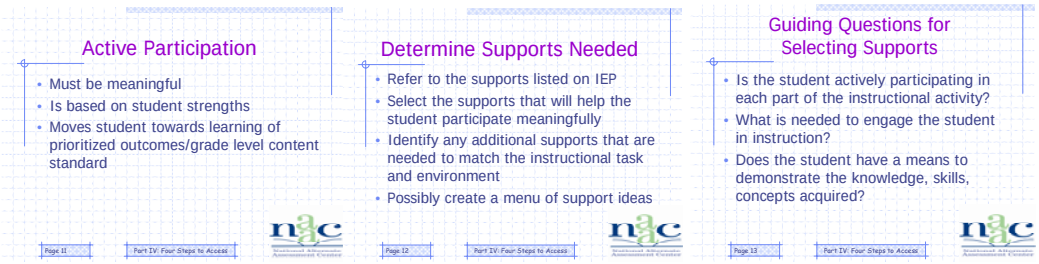
Activity 2 (after Step 2 introduction)

- **a.** Spend 2 minutes in small groups letting participants describe to each other collaboration techniques they have found to work. **(3 minutes)**
- **b.** (1) Have participants in small groups define 1 problem they have had in ensuring effective collaboration. (2) Write this problem on note paper and put in an envelope. (5 minutes) (3) Exchange this envelope with a different table. The receiving table will brainstorm several possible solutions to the problem and write those down on the note paper. (5minutes) (4) The envelope then gets returned to the original table with a review of the possible solutions. (2 minutes) **(15 minutes)**
- **c.** (1) Have participants in small groups number off within their groups. (2) Jigsaw the groups so that all number 1s are together, numbers 2s together, etc. (2 minutes) (3) Within the newly formed groups, have participants discuss collaboration strategies that have worked for them. (4) Each group member writes down all the suggestions. (10 minutes) (5) Re-form the groups back to their original configuration and have group members report out within their group the suggestions they wrote down. (8 minutes) **(20 minutes)**

Step 3 - Identify the instructional activities







In this step, a careful description and analysis of the instructional activities developed to teach the grade level content standards will help to clarify the barriers in the instructional environment that may interfere with student learning and determine if supports typically in place (Step 2, Define the outcome of instruction for all students) are providing appropriate and effective solutions. Solutions to these barriers should ensure that the student with disabilities has equitable access to instruction and curriculum when compared to all other learners. Burdge et al (2001) identify five common instructional activities. The following chart examines the interplay of these activities with the characteristics of a particular student and identifies potential barriers for that student.

Activity	**Particular Student Characteristics**	**Barriers For This Particular Student**
Lecture and note-taking	Limited attention span; difficulty assimilating basic information Difficulty with fine motor	Lecture is delivered at a fast pace and does not always clearly identify major points Note taking requires sophisticated paper/pencil skills
Cooperative learning groups	Inconsistent communication skills	Interactions require quick sharing of ideas/thoughts/ opinions; augmentative communication system is not easily nor quickly adaptable and does not always have vocabulary related to the topic
Research	Non-reader	Research information is primarily in print (text and computer); important information is not always distinct from details or additional information
Practice activities and homework	Requires assistive technology to participate in activities and complete work	Assistive technology is not available at home

Culminating projects	Difficulty with fine motor Inconsistent communication skills	Project requires written information Project must be presented to class

If these instructional activities are designed using the framework of Universal Design for Learning (UDL), (CAST, 2002), the unique needs of a broad spectrum of learners will be addressed from the beginning. Barriers inherent within typical instructional activities can addressed through flexible teaching strategies using multiple forms of media. Flexible options for students to engage in learning and demonstrate what they know further remove barriers and limit missed opportunities, thus reducing the necessity for adaptations to the curriculum for the many students who struggle with routine instructional activities, including students with disabilities.

Three questions addressing the main principles of UDL might be useful to instructional teams as they develop and review instructional activities for all students:

1. Does instruction provide multiple, flexible methods of representation to give learners various ways of acquiring information and knowledge?
2. Does instruction provide multiple, flexible methods of expression and apprenticeship to provide learners alternatives for demonstrating what they know?
3. Does instruction provide multiple, flexible options for engagement to tap into learners' interests, challenge them appropriately, and motivate them to learn?

(CAST, 2002)

It is crucial to understand that the active participation of the student with disabilities in all of the instructional activities should result in the achievement of the prioritized outcome(s) and grade level content standard(s) versus simply participating in or completing the activities. Previously, when students were included in general curriculum activities for social inclusion, the focus was often solely upon completing the activities as a matter of belonging to the community of learners; therefore, the student might have been provided hand over hand assistance, a model to copy, or even a separate activity to complete. These types of assistance did not move the student towards learning the content standard; rather the focus was on social inclusion as opposed to content knowledge acquisition.

Even after the most careful instructional planning using the principles of UDL has occurred and the IEP has ensured the provision of supports that provide access to most instructional activities, barriers to learning may still exist for students with the most significant cognitive disabilities within specific activities. In these cases, a more specialized support may be called for, such as support provided by a general education teacher or peer and both low- and high-tech assistive technology adaptations, strategies, and tools. Considering the rapidly developing world of assistive technology coupled with an individual's changing level of skills, it is important to continually evaluate the use of specific tools to determine if they are effective and the best way to support active

participation, both to access information and demonstrate knowledge. In other words, students should never be denied instruction on concepts because they are unable to access the information through traditional instructional formats such as reading the text without appropriate adaptations or because they were unable to demonstrate the learning through traditional means. Instead, the information needs to be presented in a way that is accessible and meaningful to the student (e.g., tactile objects, picture symbols or use of a text reader) so that the student has equitable opportunities to learn and demonstrate knowledge, as do all other students. The use of digital media can facilitate this through its flexibility. Text, images, sounds and movies can be digitized and represented in alternate forms such as symbols or graphics.

It may be helpful to create a menu of support ideas to be utilized across instructional activities. One example might be when the class is reading orally, the student could listen with the additional support of manipulating an object representative of the topic of the text. Another might be when the class is completing a worksheet, the student could match picture symbols to vocabulary words. A complete menu of supports and means of active participation that correlate with major instructional activities such as listening, reading, and writing, ensures that meaningful supports are planned and in place for the student, and that these supports are not just occurring "on the fly." Pathways (Denham, 2004), located in Appendix B, is a resource which provides numerous ways to make learning accessible. It includes a section for reading, writing, and presenting, and is helpful when planning for access to the general curriculum and standards. If careful planning of appropriate supports and adaptations is not accomplished, it is highly doubtful that active participation of the student with disabilities will be forthcoming. All aspects of instructional planning are critical if students are expected to perform at the highest levels possible.

Teachers may ask themselves the following questions when determining needed supports for the student:

- *Is the student actively participating in each part of the instructional activity?* That may include reading, writing, speaking, listening, answering questions, doing research, taking tests, etc. These activities may be done in the context of different instructional formats, such as group or individual work. The focus is not upon *which* instructional activities will the student participate in, but *how*.

- *What is needed to engage the student in the instruction?* This may not require anything additional to what all students are receiving, but may be something as simple as the student having an object representative of the concept to hold while listening. The engagement should be matched to the particular learning style of the student and facilitate the acquisition of the content.

- *Does the student have a means to demonstrate the knowledge, skills, and concepts acquired?* Again, preferential learning styles should play a role here, and multiple intelligences (Gardner, 1993) should also be considered. Even though the student may be learning more complex and sophisticated ways to communicate knowledge, it may be preferable to rely on a more established

means of communication so that the demonstration of new knowledge is not compounded by a "new" communication mode as well.

Classroom based assessments are generally included within general education units of study either as ongoing checks on student understanding or as end-of-instruction tests of student achievement. Both of these are essential components of instruction designed to inform teaching, providing information on what the student has learned and to what level and if additional/different instruction is needed. Step 3, Identify the instructional activities, in this process should include at least one classroom based assessment activity, being sure once more, to adhere to the principles of UDL.

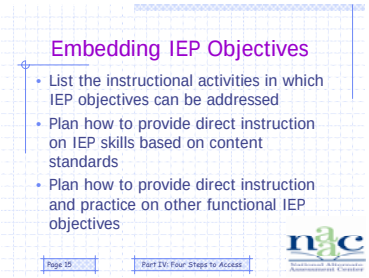
Activity 3 (after Step 3 introduction)

a. Spend 4 minutes in small groups letting participants discuss successes and difficulties in making general education activities accessible to students with significant cognitive disabilities. **(5 minutes)**

b. Give each table of participants a list of the 5 research based instructional practices at the bottom of page 4 (lecture and note taking, cooperative learning groups, research, practice activities and homework, and culminating projects) and have each group brainstorm ideas that might make these activities accessible and meaningful for students with significant cognitive disabilities. (10 minutes) Have each group report out to the large group. (5 minutes) **(15 minutes)**

c. Post chart paper in 4 areas of the room. Label one chart "visual impairments", one "hearing impairments", one "tactile needs", and one "other learner needs." Divide participants into 4 groups. Assign each group to a chart. Give five minutes for groups to list on the paper a menu of supports and adaptations that might make instruction more accessible for students who have that particular disability. Have groups rotate clockwise to the next paper, adding on the list generated by the first groups. After 3 minutes, rotate and repeat the activity for 2 minutes. Rotate and repeat once more for 2 minutes so that each group has had an opportunity to think about each disability/learning style. Rotate one more time for about 1 minute so that each group can see what has been added to its original list. **(20 minutes)**

Step 4 - Target specific objectives from the Individual Education Program (IEP)



This step begins to overlap with Step 1, Identify or link to the appropriate standard, if IEP goals and objectives addressing the general curriculum and achievement of standards have been written. If this is the case, opportunities to instruct, learn, and practice these IEP skills will be inherent within the instructional activities specified in Step 3, Identify the instructional activities. There may be opportunities to practice IEP objectives, such as increasing vocabulary or comprehension within the instructional unit based on one novel, and then again within instruction on additional novels. Reading and math IEP objectives can often be addressed in cross-curricular instructional units as well. For example, increasing reading vocabulary could be addressed using science and social studies texts, as well as in language arts class. Improving computation skills could be addressed in math and science experiments.

Basic communication, motor, and social skills have sometimes been taught in relative isolation, as goals in and of themselves. What has been missing from instruction is context – what does a student need to communicate, what does she need to be able to do, and what social skills does he need. Embedding communication, motor, and social skills within in the general curriculum - what does the student need to communicate during social studies, what does she need to be able to do physically during math, and how does he need to interact with others in language arts, creates additional access to the curriculum, and can be addressed while providing instruction on the content standards.

By embedding basic communication, motor and social skills within the context of general education activities (the same ones as specified in Step 3, Identify the instructional activities), the teacher provides students access to the curriculum as required by IDEA 2004 and NCLB, while still providing essential instruction on those critical skills. This allows for a seamless transition from basic skills to the acquisition of content area knowledge. With curriculum as the basis for instruction, all students will be receiving the same content. As they become more effective communicators, they will be able to demonstrate what they know about the curriculum. Even though some students may be working explicitly on these types of skills, it is important for teachers to strive to instruct and assess students' performance on the content knowledge as well.

For example, reading and math skills are used throughout many content areas. Reading is used to access information in a variety of situations, such as reading about electrons in science and reading directions for a project in Technology Education. Math skills are often used within academic areas as well - numbers are used to locate pages in a text book, measure temperature in science, and create geometric shapes in art class. It is also important to remember that while reading and math skills can be used across many other content areas, the primary places for instruction and learning of the reading and math skills are language arts and math classes.

When a student has cross-curricular IEP goals and objectives, it is beneficial to identify when the objectives occur within an instructional activity. Identifying such times will allow the teacher to provide systematic instruction, as well as monitor performance. For instance, along with the language arts skill of increasing vocabulary through the use of picture symbols, a student might also work on following directions during projects,

initiating use of his/her communication system, and remaining on task in general education instructional activities. While addressing objectives of the instructional unit and planning for participation, the teacher can designate sessions to keep data on each of these objectives for the IEP progress report, as well as assessing for performance toward the grade level content standard. Another example might be that, in addition to working on the language arts skills of writing, increasing sight word vocabulary and answering recall questions, a student might work on articulation and supplementing verbal communication with picture symbols. Data probes can occur within designated sessions during the instructional unit, rather than as isolated repeated trial sessions.

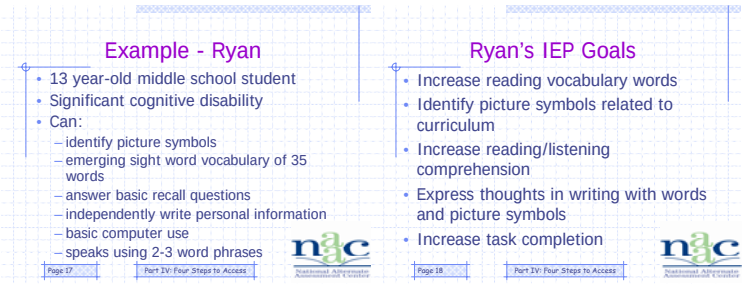
Activity 4 (after Step 4, Target specific objectives from the Individual Education Program introduction)

- **a.** Spend 2 minutes in small groups discussing the idea of embedding non-standards based IEP goals and objectives within general education, standards based activities. **(3 minutes)**
- **b.** Given a list of IEP goals, both standards based and non-standards based, have each group sort them into standards based and non-standards based groupings. Have groups report out how they categorized the goals and why, understanding that some IEP goals can be either standards based or non-standards based according to context. **(15 minutes)**
- **c.** Have each table generate a list of more traditional IEP goals. (5minutes) Provide them time to discuss how these could be embedded within standards based, general education activities. (10 minutes) *Take care to make sure that participants are identifying skills and not activities as they generate goals. For example, one common* ***activity*** *that is sometimes found on students' IEPs is "sorting silverware." This is separate from the* ***skill*** *of "sorting by one or more characteristics". Another example is "doing the laundry" (****activity****) versus "following verbal/written directions to complete a task" (****skill****).* Report out general findings to large group, giving time for other groups to provide feedback. (10 minutes) **(25 minutes)**

Examples

The following is an example of the stepwise process for a middle school student working on a language arts standard. Ryan is a 13 year old student who has a significant cognitive disability. He is currently able to identify familiar pictures and picture symbols, has an emerging sight word vocabulary of around 35 words, and can answer basic recall questions regarding short passages of text. He speaks in 2 and 3 word phrases and has poor articulation. He can independently write his personal information and can copy text. He can click and drag using a mouse on the computer, and can type but only when provided a model. Ryan's IEP goals are:

- Increase reading vocabulary words
- Identify picture symbols related to curriculum
- Increase reading/listening comprehension
- Express thoughts in writing with words and picture symbols
- Increase task completion



The following stepwise process was planned in collaboration with a middle school language arts teacher.

Activity 5 (before Ryan and Veronica samples)

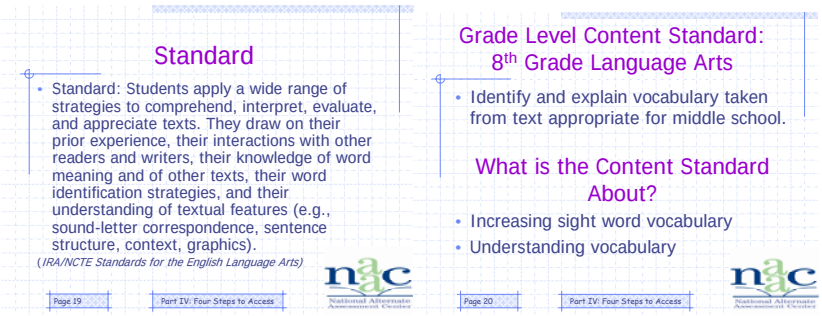
Conduct brief needs assessment by asking for and charting the "Top Ten Questions" participants have about the process. Use these to guide the training as Ryan and Veronica samples are presented.

a. Let participants state questions in large group **(3 minutes)**

b. Have participants within each small group come to consensus on 2-3 questions, depending upon the size of the groups and then report out to large group **(10 minutes)**

c. n/a

Step 1 - Identify or link to the appropriate standard:



Standard: Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies, and their understanding of textual features (e.g., sound-letter correspondence, sentence structure, context, graphics) (*IRA/NCTE Standards for the English Language Arts).*

Grade level Content Standard: Identify and explain vocabulary taken from text appropriate for middle school.

The standard is about increasing vocabulary.

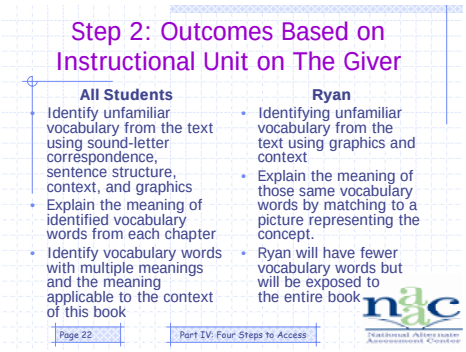
The general education language arts teacher is actually addressing multiple standards during this instructional unit; however, this example will focus on only one standard to more clearly illustrate the stepwise process.

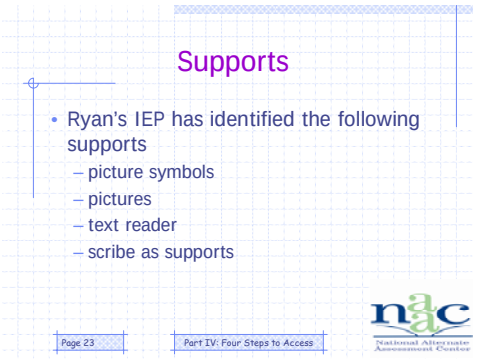
Figure 1 Step 1: Identify the standard(s), of Ryan's Chart

1. IDENTIFY THE STANDARD(S) THE INSTRUCTIONAL UNIT WILL ADDRESS.		
What is the state standard?	**What is the grade level standard?**	**What is the standard all about?**
Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies, and their understanding of textual features (e.g., sound-letter correspondence, sentence structure, context, graphics	*Identify and explain vocabulary taken from text appropriate for middle school.*	*Increasing vocabulary*

DRAFT

Step 2 – Define the outcomes of instruction for all students





The teacher is using the novel, *The Giver* by Lois Lowery (1999) as the text appropriate for middle school and as the basis for this instructional unit. The book is the story of Jonas and his job as the keeper of memories in a self-contained utopia that is isolated from *Elsewhere*. Everything is the same in this utopia - there are no colors, and all jobs and families are assigned. Anyone who breaks the rules, gets sick, or has a disability is sent to *Elsewhere*. Through his senses and emotions, Jonas learns from The Giver about the memories of experiences that the people in the community chose to give up in order to attain Sameness and the illusion of social order.

The general education teacher has determined that all the students will be expected to learn the following based on the given content standard:

- Identify unfamiliar vocabulary from the text using sound-letter correspondence, sentence structure, context, and graphics

- Explain the meaning of identified vocabulary words from each chapter
- Identify vocabulary words with multiple meanings and the meaning applicable to the context of this book

The teachers discuss these outcomes and for Ryan decide that they will focus on:

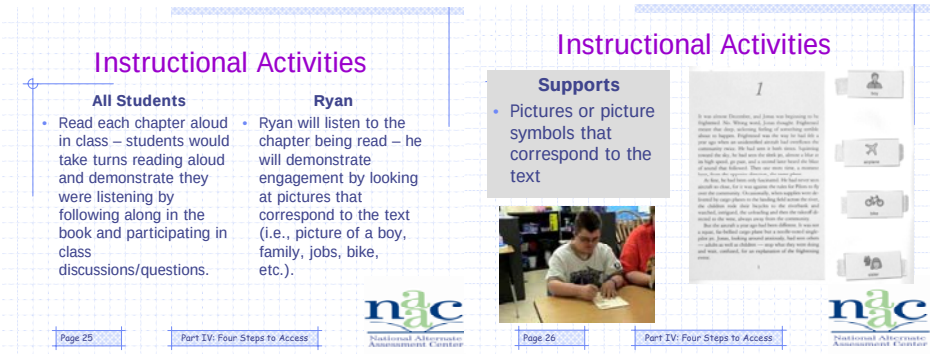
- identifying unfamiliar vocabulary from the text using graphics and context
- explaining the meaning of those same vocabulary words by matching to a picture representing the concept.

Additionally, it is agreed that Ryan will have fewer vocabulary words to learn. Ryan will be exposed to the entire book, while the teacher also focuses direct instruction on the prioritized outcomes targeted for Ryan. His IEP specifies picture symbols, pictures, text reader, and scribe as supports. These will be considered in preparing for instructional activities in Step 3, Identify the instructional activities.

Figure 2 Step 2: Define the outcome(s) of instruction, of Ryan's Chart

2. DEFINE THE OUTCOME(S) OF INSTRUCTION FROM THE INSTRUCTIONAL UNIT ON _____.		
What are the desired outcomes for all students in general education? What will classroom based assessment look like?	**Which outcomes will be prioritized for direct instruction and monitoring for the target student with significant cognitive disabilities? What will formative assessment look like?**	**What supports (already identified or additional) would be necessary for the target student to access the instruction?**
– *Identify unfamiliar vocabulary from the text using sound-letter correspondence, sentence structure, context, and graphics* – *Explain the meaning of identified vocabulary words from each chapter* – *Identify vocabulary words with multiple meanings and the meaning applicable to the context of this book*	– *identifying unfamiliar vocabulary from the text using graphics and context* – *explaining the meaning of those same vocabulary words by matching to a picture representing the concept.* *He will have fewer vocabulary words but will still be exposed to the entire book.*	*picture symbols, pictures, text reader, and scribe as supports*

Step 3 – Identify the instructional activities:



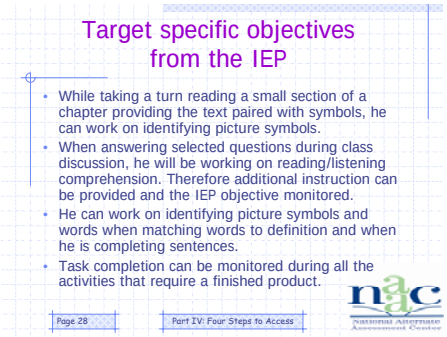
The general education teacher lists the types of instructional activities planned to address the standard while reading *The Giver* and then the teachers plan for ways that Ryan can actively participate. They determine the supports Ryan needs for each activity.

General Education Instructional Activities	Plans for Ryan's Participation	Supports
Read each chapter aloud in class – students take turns reading aloud and demonstrate they are listening by following along in the book and participating in class discussions/questions.	- Ryan will listen to chapter being read – he will demonstrate engagement by looking at pictures that correspond to the text (i.e., picture of a boy, family, jobs, bike, etc.). *(figure 1)* - He can take a turn reading a small section of a chapter by providing the text paired with symbols and using software designed for this purpose.*(figure 2)* - He can answer selected questions during class discussion.	- Pictures or picture symbols that correspond to the text - *Writing With Symbols 2000* (Widgit) or *PixWriter* (Slater Software, Inc) - Speech/language pathologist practice with content vocabulary Speech/language pathologist practice with content vocabulary
Each student will keep a vocabulary journal for each chapter by: - writing unfamiliar words when heard while reading - writing the words identified by the teacher - recording the page on which the vocabulary word is found - writing the sentence it was found in - writing the definition - identifying words that have multiple meanings and using the word in a different context	Ryan will: - pick the words paired with picture symbols from several within the entire book that he does not know and glue those in his journal - glue other words identified by the teacher - match the word to the sentence in which it appeared - match the printed word to the picture symbol *(figure 3)* - match multiple meanings given picture symbols (e.g., "rule"as a guideline and "rule" as a measuring tape)*(figure 4)*	- Picture symbol vocabulary words - Occupational therapist may help with fine motor skills
Classroom based assessment: Students will be given a list of vocabulary words to define and to write the word in a sentence using an alternative meaning	Ryan, using Writing With Symbols with a send grid, will: - match a vocabulary word to its definition - complete sentences with different contexts with the correct vocabulary word	

Figure 3 Step 3: Identify the instructional activities, of Ryan's Chart

What are the instructional activities planned for all students?	How can the student actively participate in the instructional activities?	What supports (already identified or additional) would help the student access the instruction?
Read each chapter aloud in class – students would take turns reading aloud and demonstrate they were listening by following along in the book and participating in class discussions/questions. *Each student will keep a vocabulary journal for each chapter by:* – *writing unfamiliar words when heard while reading* – *writing the words identified by the teacher* – *record the page on which the vocabulary word is found* – *write the sentence it was found in* – *write the definition* *identify words that have multiple meanings and use*	– *Ryan will listen to chapter being read – he will demonstrate engagement by looking at pictures that correspond to the text (i.e., picture of a boy, family, jobs, bike, etc.). (figure 1)* – *He can take a turn reading a small section of a chapter providing the text paired with symbols, using software designed for this purpose.(figure 2)* – *He can answer selected questions during class discussion.* *Ryan will:* – *pick the words paired with picture symbols from several within the entire book that he does not know and glue those in his journal*	– *Pictures or picture symbols that correspond to the text* – *Writing With Symbols 2000 (Widgit) or PixWriter (Slater Software, Inc)* *Speech/language pathologist practice with content vocabulary Speech/language pathologist practice with content vocabulary* – *Picture symbol vocabulary words* – *Occupational therapist may help with fine motor skills*

Step 4 - Target specific objectives from the IEP



Ryan will be able to work on his reading IEP objectives within several of the instructional activities:

- While taking a turn reading a small section of a chapter providing the text paired with symbols, he can work on identifying picture symbols.
- When answering selected questions during class discussion, he will be working on reading/listening comprehension; therefore, additional instruction can be provided and the IEP objective monitored.
- He can work on identifying picture symbols and words when matching words to definitions and when he is completing sentences.
- Task completion can be monitored during all the activities that require a finished product.

Figure 4 Step 4: Target specific objectives from the IEP, of Ryan's Chart

4. TARGET SPECIFIC OBJECTIVES FROM THE IEP TO ADDRESS DURING THE UNIT.		
Which of the instructional activities provide opportunity to work on objectives?	**What IEP objectives re: the general curriculum can be addressed within the instructional activities?**	**What other IEP objectives can be addressed within the instructional activities?**
1. *take a turn reading a small section of a chapter providing the text paired with symbols* 2. *answer selected questions during class discussion* 3. *match words to definition complete sentences.* 4. *all the activities that require a finished product.*	1. *Identifying picture symbols* 2. *work on reading/listening comprehension and monitor* 3. *increase reading vocabulary words*	4. *task completion can be monitored during*

Figure 5 Picture symbols that accompany the novel.

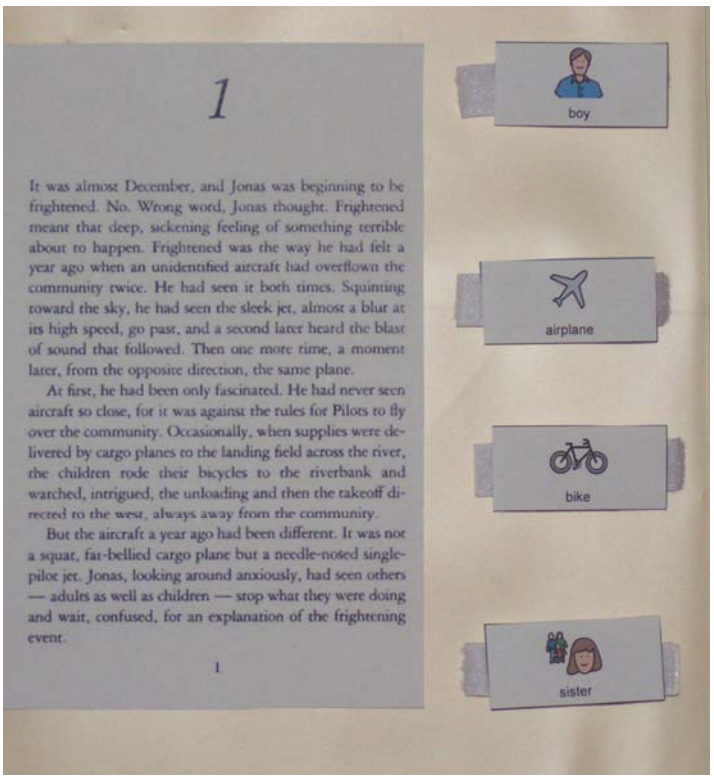


Figure 6 Section of text written in picture symbols.

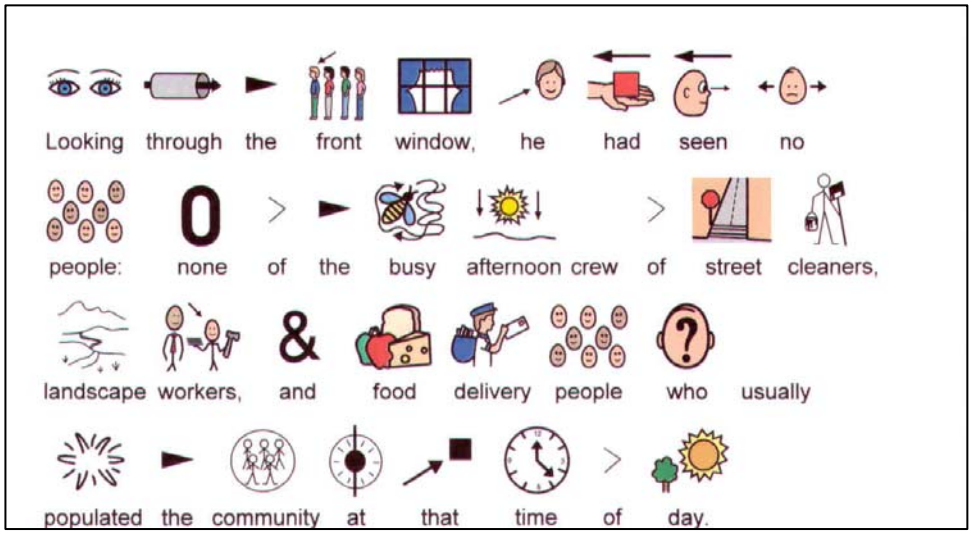
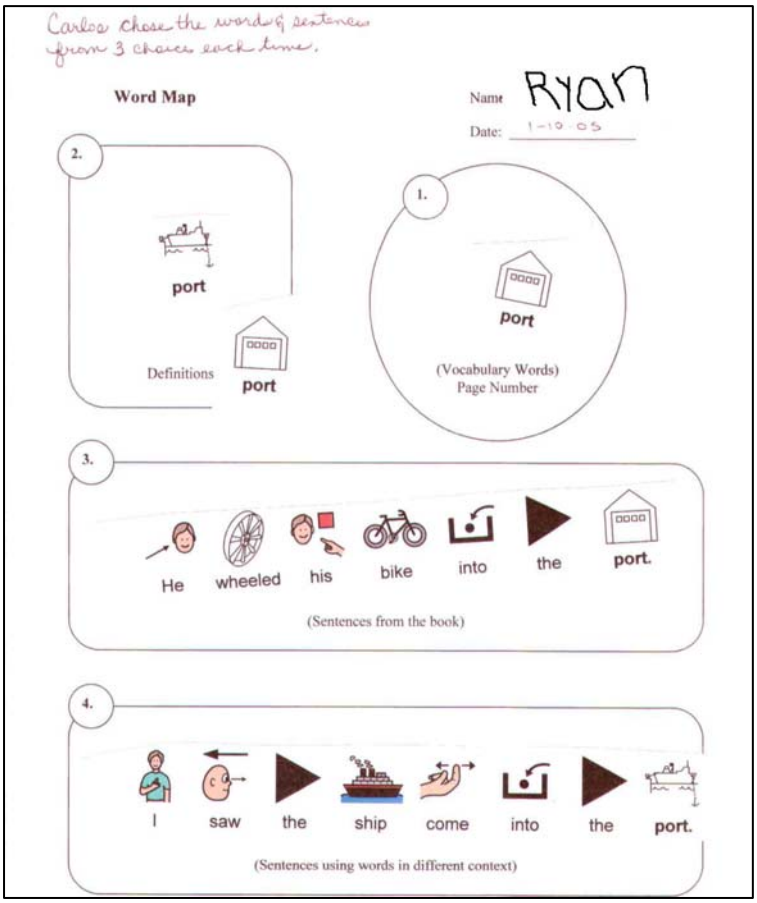


Figure 7 Adapted word map



Stepwise Process to Accessing Grade Level Content Standards and Curriculum - Ryan		
1. IDENTIFY THE STANDARD(S) THE INSTRUCTIONAL UNIT WILL ADDRESS.		
What is the state standard?	**What is the grade level standard?**	**What is the standard all about?**
Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies, and their understanding of textual features (e.g., sound-letter correspondence, sentence structure, context, graphics	*Identify and explain vocabulary taken from text appropriate for middle school.*	*Increasing vocabulary*
2. DEFINE THE OUTCOME(S) OF INSTRUCTION FROM THE INSTRUCTIONAL UNIT ON *THE GIVER*.		
What are the desired outcomes for all students in general education? What will classroom based assessment look like?	**Which outcomes will be prioritized for direct instruction and monitored for the target student with significant cognitive disabilities? What will formative assessment look like?**	**What supports (already identified or additional) would be necessary for the target student to access the instruction?**
- *Identify unfamiliar vocabulary from the text using sound-letter correspondence, sentence structure, context, and graphics* - *Explain the meaning of identified vocabulary words from each chapter* - *Identify vocabulary words with multiple meanings and the meaning applicable to the context of this book*	- *identifying unfamiliar vocabulary from the text using graphics and context* - *explaining the meaning of those same vocabulary words by matching to a picture representing the concept.* *He will have fewer vocabulary words but will still be exposed to the entire book.*	*picture symbols, pictures, text reader, and scribe as supports*

Stepwise Process to Accessing Grade Level Content Standards and Curriculum - Ryan		
3. IDENTIFY THE INSTRUCTIONAL ACTIVITIES TO BE USED IN THE UNIT.		
What are the instructional activities planned for all students?	**How can the student actively participate in the instructional activities?**	**What supports (already identified or additional) would help the student access the instruction?**
1. Read each chapter aloud in class - *students would take turns reading aloud* - *demonstrate they were listening by following along in the book* - *participate in class discussions/questions.* *2. Each student will keep a vocabulary journal for each chapter by:* - *writing unfamiliar words when heard while reading* - *writing the words identified by the teacher* - *recording the page on which the vocabulary word is found* - *writing the sentence in which it was found* - *writing the definition* - *identifying words that have multiple meanings and using the word in a different context* *3. Classroom based assessment:* - *Students will be given a list of vocabulary words to define and to write the word in a sentence using an alternative meaning.*	*1. Read each chapter aloud in class* - *Ryan will listen to chapter being read – he will demonstrate engagement by looking at pictures that correspond to the text (i.e., picture of a boy, family, jobs, bike, etc.). (figure 1)* - *He can take a turn reading a small section of a chapter providing the text paired with symbols, using software designed for this purpose.(figure 2)* - *He can answer selected questions during class discussion.* *2. Ryan will:* - *pick the words paired with picture symbols from several within the entire book that he does not know and glue those in his journal* - *glue other words identified by the teacher* - *match the word to the sentence that it was in* - *match the printed word to the picture symbol (figure 3)* - *match multiple meanings given picture symbols (e.g., rule such as a guideline, and rule as a measuring tape) (figure 4)* *3. Ryan using Writing With Symbols with a send grid will:* - *match a vocabulary word to its definition complete sentences with different contexts with the correct vocabulary word*	- *Pictures or picture symbols that correspond to the text* - *Writing With Symbols 2000 (Widgit) or PixWriter (Slater Software, Inc)* - *Speech/language pathologist practice with content vocabulary* - *Picture symbol vocabulary words* - *Occupational therapist may help with fine motor skills*

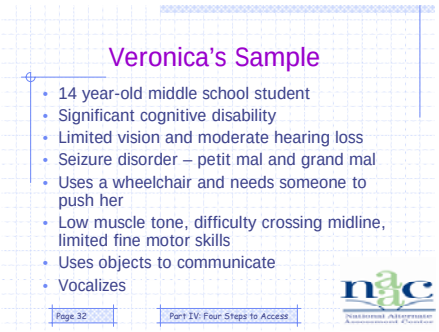
Stepwise Process to Accessing Grade Level Content Standards and Curriculum - Ryan		
4. TARGET SPECIFIC OBJECTIVES FROM THE IEP TO ADDRESS DURING THE UNIT.		
Which of the instructional activities provide opportunity to work on objectives?	**What IEP objectives re: the general curriculum can be addressed within the instructional activities?**	**What other IEP objectives can be addressed within the instructional activities?**
1. take a turn reading a small section of a chapter providing the text paired with symbols *2. answer selected questions during class discussion* *3. match words to definition in complete sentences.* *4. all the activities that require a finished product.*	*1. Identifying picture symbols* *2. Working on reading/listening comprehension and monitor* *3. Increasing reading vocabulary words*	*4. Task completion can be monitored during all activities.*

Veronica

The following is an example of a completed stepwise chart for Veronica. Veronica is a 14 year old middle school student with a significant cognitive disability. She has other disabilities resulting in her label of multiply disabled. Her other disabilities include limited vision which is partially corrected with glasses, a moderate hearing loss which requires hearing aids (although she does not tolerate those), and a seizure disorder which is generally controlled with medication. Even though her seizures have decreased with the medication, she still has approximately 4 detectable petit mal seizures daily at school and 3 grand mal seizures a week. The grand mal seizures require a recovery period of 45-60 minutes. Veronica uses a wheelchair and needs someone to push her. She has low muscle tone but can sit in a chair without support for about 7 minutes. She has some difficulty in crossing midline. Her fine motor skills include the ability to hold objects in either hand but she cannot isolate use of index or other fingers. Veronica can consistently track objects and select her choice, either by gaze or reach-and-grasp. Veronica's reach-and-grasp allows her to use objects to communicate and this makes instruction and performance accessible. She also vocalizes.

Her IEP goals include:
- Increase communication using an augmentative communication board
- Follow simple one step directions
- Activate a switch with up to 8 keys
- Identify high contrast picture symbols/pictures
- Identify numbers 1 – 5
- Match objects to objects or picture symbols

The chart below is an example of what a plan might look like for Veronica. Ideally, the general education teacher and the special education teacher collaborate to plan for instruction; however, this plan could be completed by either person. Regardless of how the plan is made, it is vital to begin with the overall general education standard, grade level content standard, expected outcomes, and instructional activities, and adjust as needed to provide access for the student with significant cognitive disabilities.



Activity 6 (after Ryan and/or Veronica samples)

In working with teachers in 5 states, we have found that it is preferable to have them complete the next activity in stages – one for each step with feedback after each step. Having them complete all four steps before receiving feedback gives too much opportunity for incorrect practice, resulting in misconceptions regarding each step and frustration with the process as a whole.

a. 1. Using the chart on the following page, have each table of participants identify a student and write a short vignette. Complete Step 1, Identify the standard(s), (content specialists and general education teachers will be the "resident experts" in this step). Have participants review their own work with these guiding questions:

- Column 3: Does the information in the column "What is the standard all about?" maintain the intent, essence, critical function, or big idea of the grade level standard? (10 minutes)

2. Complete Step 2, Define the outcome(s) of instruction, (content specialists and general education teachers will be the "resident experts" in the first column with special education teachers being the "experts" in the second and third). Have participants review their own work with these guiding questions:

- Column 1: Do the outcomes for all students relate directly to the achievement of the grade level standard? Does the classroom based assessment actually measure the students' performance toward the grade level standard?
- Column 2: Do the prioritized outcomes relate directly to the outcomes for all students? Do the prioritized outcomes match the intent of the outcomes for all and do they mirror the performance demands? Have a sufficient number been selected?
- Column 3: Do the supports listed directly impact upon the accessibility of instruction and performance? Are there any others that might be useful? (5 minutes)

3. Complete Step 3, Identify the instructional activities (content specialists and general education teachers will be the experts in the first column and special education teachers will be the experts in Columns 2 and 3). Have participants review their own work with these guiding questions:

- Column 1: Are the activities listed in enough detail? Do they represent all aspects of typical instruction such as lecture, individual and group work, research, reading, writing, etc.? Does the classroom based assessment actually measure the students' performance toward the grade level standard?
- Column 2: Is the active participation identified for each step? Does the active participation mirror the participation of typical students in each step (i.e., if other students are calculating, is the student with disabilities calculating)?
- Column 3: Are appropriate supports (accommodations, modifications, assistive technology, people) in place allowing for maximum participation and learning? Do the activities require additional supports other than those identified in Step 2? (20 minutes)

4. Complete Step 4, Target specific objectives from the Individual Education Program, (special education teachers will be the experts in this step). Have participants review their own work with these guiding questions:

- Column 2: Are all standards based goals connected to one or more general education activities?
- Column 3: Are there opportunities to work on other goals (non-standards based) at naturally occurring times within the context of general education activities? (10 minutes) **(45 minutes)**

b. Complete **Activity 5.a.** except ask groups to report out after each step. **(60 minutes)**

c. Complete **Activity 5.a.** except ask groups to critique each other's work. Then groups revise as necessary. **(75 minutes)**

Stepwise Process to Accessing Grade Level Content Standards and Curriculum		
1. IDENTIFY THE STANDARD(S) THE INSTRUCTIONAL UNIT WILL ADDRESS.		
What is the state standard?	**What is the grade level standard?**	**What is the standard all about?**
Understand measurable attributes of objects and the units, systems, and processes of measurement Apply appropriate techniques, tools, and formulas to determine measurements	Understand, select, and use units of appropriate size and type to measure angles, perimeter, area, surface area, and volume. Select and apply techniques and tools to accurately find length, area, volume, and angle measures to appropriate levels of precision.	Use appropriate tools and techniques to measure angles, perimeter, area, surface area, and volume.
2. DEFINE THE OUTCOME(S) OF INSTRUCTION FROM THE INSTRUCTIONAL UNIT ON *GEOMETRY*.		
What are the desired outcomes for all students in general education? What will classroom based assessment look like?	**Which outcomes will be prioritized for direct instruction and monitoring for the target student with significant cognitive disabilities?**	**What supports (already identified or additional) would be necessary for the target student to access the instruction?**
- Apply appropriate measuring techniques to authentic task - Demonstrate knowledge of how to measure volume - Be able to estimate needed amount of materials	- Apply appropriate measuring techniques to authentic task - Know how much something holds (i.e., volume)	- Math manipulatives - 4 key voice output device - Adaptive keyboard - Auditory feedback software - Pictures

3. IDENTIFY THE INSTRUCTIONAL ACTIVITIES TO BE USED IN THE UNIT.		
What are the instructional activities planned for all students? What will the classroom based assessment look like?	**How can the student actively participate in the instructional activities?**	**What supports (already identified or additional) would help the student access the instruction?**
1. Review length, width, and depth and discuss how these three things are used to measure volume - The class will brainstorm ways to compute volume (e.g., mathematical formula, fill containers with cubes, build to scale with cubes and count) **2.** Practice figuring volume by completing problems on a worksheet **3.** Work in small groups trying out various methods determined during the brainstorming activity (e.g., math formulas, math manipulatives, scaled materials) **4.** Apply the skills in the context of constructing a playhouse: To build a playhouse 5 feet by 3 feet, the students must first determine how many cubic feet of concrete is needed for the foundation and the floor and then convert to cubic yards.	1. 3 pictures/picture symbol of the same item with the length highlighted on one, width on one, and depth on the third. The teacher or paraprofessional will provide direct instruction on each. She will line a tactile ruler next to the highlighted section of each picture. 2. While students are doing a worksheet, Veronica will practice lining her tactile ruler next to the highlighted areas of the pictures and activating the corresponding number on the voice output device. 3. In small group Veronica will use 1 centimeter cubes to fill a container (cube) and will be assisted in counting how many it took to fill the container. 4. Using a template, she matches one cube to each square on the template and then is assisted in counting the number of cubes used. She can use an adapted keyboard set up like a calculator to convert to cubic yards by matching the number of cubes counted and dividing by 3 (this will probably require gestural or physical prompting).	1. line drawings or pictures tactile ruler 2. voice output device 3. one centimeter cubes 4. template of scaled drawing of the playhouse one centimeter cubes adapted keyboard set up like a calculator calculator on the computer

4. TARGET SPECIFIC OBJECTIVES FROM THE IEP TO ADDRESS DURING THE UNIT.		
Which of the instructional activities provide opportunity to work on objectives?	**What IEP objectives re: the general curriculum can be addressed within the instructional activities?**	**What other IEP objectives can be addressed within the instructional activities?**
1. place tactile ruler next to each picture/picture symbol	1. identify the picture/picture symbol with verbal cue	
2. identifying the number on the ruler	2. identifying the correct number on the voice output device	2. increase communication using augmentative communication device
3. placing 1 centimeter cubes into the container	3. No specific IEP objective for this activity	3. follow one step directions
4. placing each cube on a square on the template	4. matching objects to objects or picture symbols (i.e., template square)	
5. operate the adapted calculator	5. identifying numbers	5. increasing communication

Stepwise Process to Accessing Grade Level Content Standards and Curriculum		
1. IDENTIFY THE STANDARD(S) THE INSTRUCTIONAL UNIT WILL ADDRESS.		
What is the state standard?	**What is the grade level standard?**	**What is the standard all about?**
2. DEFINE THE OUTCOME(S) OF INSTRUCTION FROM THE INSTRUCTIONAL UNIT ON _____.		
What are the desired outcomes for all students in general education? What will classroom based assessment look like?	**Which outcomes will be prioritized for direct instruction and monitoring for the target student with significant cognitive disabilities? What will formative assessment look like?**	**What supports (already identified or additional) would be necessary for the target student to access the instruction?**
3. IDENTIFY THE INSTRUCTIONAL ACTIVITIES TO BE USED IN THE UNIT.		
What are the instructional activities planned for all students?	**How can the student actively participate in the instructional activities?**	**What supports (already identified or additional) would help the student access the instruction?**
4. TARGET SPECIFIC OBJECTIVES FROM THE IEP TO ADDRESS DURING THE UNIT.		
Which of the instructional activities provide opportunity to work on objectives?	**What IEP objectives re: the general curriculum can be addressed within the instructional activities?**	**What other IEP objectives can be addressed within the instructional activities?**

Stepwise Glossary

Collaboration- A relationship between individuals or organizations that enables the participants to accomplish goals more successfully than they could have separately. Educators are finding that they must collaborate with others to deal with increasingly complex issues.

Curriculum- Although this term has many possible meanings, it usually refers to a written plan outlining what students will be taught (a course of study). Curriculum documents often also include detailed directions or suggestions for teaching the content. Curriculum may refer to all the courses offered at a given school, or all the courses offered at a school in a particular area of study. For example, the English curriculum might include English literature, literature, world literature, essay styles, creative writing, business writing, Shakespeare, modern poetry, and the novel.

Hidden curriculum- The habits and values taught in schools that are not specified in the official written curriculum.

Instructional unit- A segment of instruction focused on a particular topic. School courses are frequently divided into units lasting from one to six weeks. For example, an American history course might include a four-week unit on The Westward Movement.

Outcomes- Intended results of schooling: What students are supposed to know and be able to do. Educators and others may use the term outcomes to mean roughly the same as goals, objectives, or standards

Standards- In current usage, the term usually refers to specific criteria for what students are expected to learn and be able to do. These standards usually take two forms in the curriculum:

> Content standards (similar to what were formerly called goals and objectives), which tell what students are expected to know and be able to do in various subject areas, such as mathematics and science.
>
> Performance standards, which specify what levels of learning are expected. Performance standards assess the degree to which content standards have been met. The term "world-class standards" refers to the content and performances that are expected of students in other industrialized countries. In recent years, standards have also been developed specifying what teachers should know and be able to do.

Definitions are from Lexicon of Learning, www.ascd.org.

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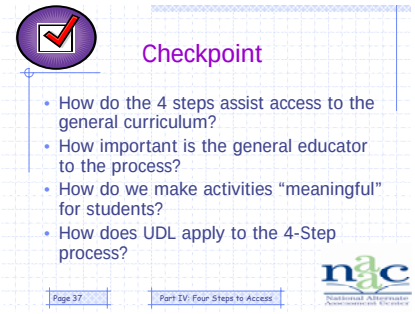
Checkpoint
How do the 4 steps assist access to the general curriculum?
How important is the general educator to the process?
How do we make activities "meaningful" for students?
How does UDL apply to the 4-Step process?
Page 37
Part IV: Four Steps to Access

Notes

References and Annotated Bibliographies for Part IV:
Stepwise Process to Access Grade Level Content Standards and Curriculum

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Zabala, J. S. (1996*) SETTing the stage for success: Building success through effective selection and use of assistive technology systems*. Retrieved June 5, 2014, from http://www.ldonline.org/article/5874.

Ref. Type: Book

Notes: Book Chapter

Title: Integrating alternate assessment in the general curriculum

Authors: Burdge, M. Groneck, V.B., Kleinert, H.L., Longwill, A.W., Clayton, J., Denham, A., & Farmer-Kearns, J.

Pub. Date: 2001

Source: Alternate Assessment: Measuring Outcomes and Supports for Students with Disabilities

Vol, Issue:

Publisher: Paul H. Brookes Publishing Co.

Page #:49-76

Keywords: Alternate Assessment
General Curriculum

Abstract

Participants:

Test Design:

Findings: This chapter provides educators with a clear picture of how to incorporate individualized education programs (IEP) objectives into general education classrooms. It also outlines how teachers can document activities and learning in the format of alternate assessments through providing examples. The examples are either from actual students who have participated in alternate assessment or students with whom the authors have worked. Through these examples, a framework is included that shows educators ways to achieve and document IEP objectives. This chapter illustrates what kinds of performance evidence can be included in alternate assessments for students with significant disabilities.

Ref. Type: Article

Notes: Available Online: http://www.ihdi.uky.edu/IEI

Title: Pathways to learning for students with cognitive challenges: Reading, writing, and presenting

Authors: Denham, A.

Pub. Date: 2004

Source:

Vol, Issue:

Publisher:

Page #:

Keywords: Pathways to learning
Students with Cognitive Challenges

Abstract

Participants:

Test Design:

Findings: This piece emphasizes the idea that all learners differ across networks and teachers must individualize instruction to create a unique pathway for each learner. Using this approach can be beneficial for all students, particularly students with multiple challenges. Neuroscience research has shown that three interconnected brain networks (*recognition networks, strategic networks, and affective networks)* control the path to leaning. These networks provide the concepts and theories behind the Universal Design for Learning (UDL). Based on these ideas, the author provides suggested pathways for students as the access the general curriculum. Areas covered include reading, writing, and presenting.

Ref. Type: Book

Notes: Book

Title: Multiple Intelligences: The theory in practice

Authors: Gardner, H.

Pub. Date: 1993

Source:

Vol, Issue:

Publisher: Basic Books

Page #:305 pages

Keywords: Intelligence Theory
Multiple Intelligences

Abstract

Participants:

Test Design:

Findings: This book offers insight on the theory of multiple intelligences as founded by Howard Gardner. The theory is outlined and explained in detail. Also provided are links between the theory of multiple intelligences and education. The book is broken into 4 parts including: (1) The Theory of Multiple Intelligences, (2) Educating the Intelligences, (3) Assessment and Beyond: A Multiple Intelligences Education, and (4) The Future of Work on Multiple Intelligences. This book brings together past knowledge and current findings to provide an accurate picture of what is known about the educational implications of the theory of multiple intelligences.

Ref. Type: Book

Notes: Book Overview

Title: Classroom instruction that works: Research-Based strategies for increasing student achievement

Authors: Marzano, R.J., Pickering, D. J., Pollock, J. E.

Pub. Date: 2001

Source: Classroom instruction that works: Research-Based strategies for increasing student achievement

Vol, Issue:

Publisher: Alexandra, VA: Association for Supervision and Curriculum Development

Page #:

Keywords: Educational research; academic achievement; cooperative learning

Abstract

Participants:

Test Design:

Findings: This book discusses what works in classroom instruction using data from a Meta analysis of research studies on instructional strategies that could be used by K-12 teachers. Specifically the book focuses on how teachers can find what works, how educational research can find its way into classrooms and how this can be put into practice to help individual students. The authors examine nine- research based teaching strategies that have been found to be useful on student learning. Statistical effect sizes are provided for each strategy and illustrations of how these translate into percentile gains for students are also presented. Each chapter provides detailed classroom illustrations of teachers and students in action examples of successful instruction, a variety of frames, rubrics, organizers and charts to help clarify the illustrations. After the description of the strategies the book also describes the specific applications. An appendix showing conversion table for effect size/percentile gain is also provided.

Ref. Type: Book

Notes: Book Chapter
Available Online:
http://www.cast.org/teachingeverystudent/tes/chapter4_3.cfm

Title: What is Universal Design for Learning?

Authors: Rose, D.H., & Meyer, A.

Pub. Date: 2002

Source: Teaching every student in the digital age: Universal design for learning

Vol, Issue:

Publisher: Association for Supervision and Curriculum Design

Page #:

Keywords: Universal Design

Abstract

Participants:

Test Design:

Findings: This chapter addresses the challenges educators face today in teaching a diverse group of learners while being held accountable for their progress. CAST has developed a concept of Universal Design for Learning, which is centered on the premise that a curriculum should include alternatives to make it accessible and appropriate for all learners. This chapter includes the origins and development of UDL, addresses the important difference between access to information, and access to learning, introduces the three basic principles of UDL, and outlines how teachers can use these principles in their classrooms.

Ref. Type: Book

Notes: Book

Title: Understanding by design

Authors: Wiggins, G., & McTighe, J.

Pub. Date: 1998

Source:

Vol, Issue:

Publisher: Association for Supervision and Curriculum Design

Page #: 214 pages

Keywords: Curriculum Design

Abstract

Participants:

Test Design:

Findings: This book offers new ways to design courses and curriculum using the logic of backward design. Backward design starts with what teachers want students to know, then proceeds to the evidence they will accept as proof that students have learned the material, then finishes with how students will learn. The book proposes a multifaceted approach, which includes six facets: explanation, interpretation, application, perspective, empathy, and self-knowledge. These facets combined with the logic of backward design provide a framework for designing curriculum, assessment, and instruction.

Ref. Type: Article

Notes: Available online: http: //sweb.uky.edu/~jszaba0/SETT2.html

Title: SETTing the stage for success: building success through effective selection and use of assistive technology systems

Authors: Zabala, S.

Pub. Date: 1996

Source: The SETT Framework Revisited: http://sweb.uky.edu/~jszaba0/SETT2.html

Vol, Issue:

Publisher:

Page #:

Keywords: SETT framework, assistive technology, success

Abstract:

Participants:

Test Design:

Findings: The SETT framework is process that supports critical thinking and problem solving in the area of assistive technology. This article provides some information on the development and use of the SETT framework. In addition the author also discusses considerations of using the SETT framework as a collaborative tool by which individuals with different previous experience in assistive technology can effectively build consensus and align expectations.

Part V: Linking to Content Standards

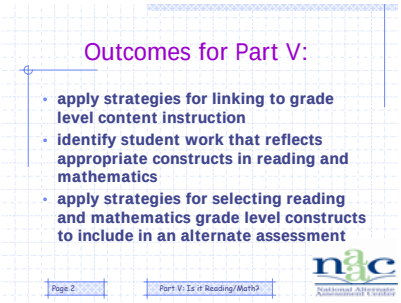
Is it Reading? Is it Mathematics?

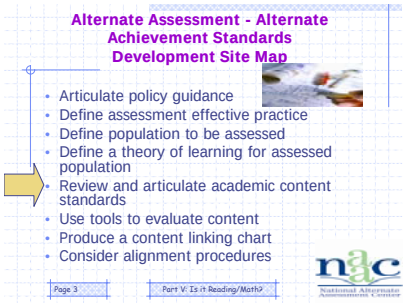
National Alternate Assessment Center

Part V: Linking to Content Standards
Is it Reading? Is it Mathematics?

Purpose of Part V

The purpose of Part V is to apply strategies for linking to grade-level content instruction, to identify student work that reflects appropriate constructs in reading and mathematics, and to apply strategies for selecting reading and mathematics grade-level constructs to include in an alternate assessment.





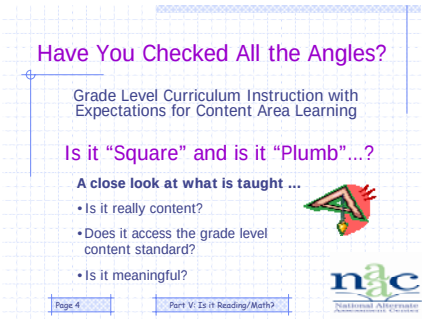
This section deals primarily with the cognition vertex of the assessment triangle as the content standards define what students should know and be able to do. It secondarily connects to the observation vertex by specifying what student performance(s) might look like.

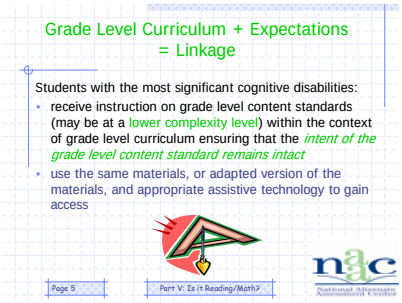
Defining Linkage

Three questions must be asked when determining whether or not instruction is linked to the grade-level curriculum expectations. These questions are as follows:

- Is it content? – Is the focus of instruction from the English Language Arts or Mathematics curriculum?
- Does it access the grade level content standard? – Is the focus of instruction based on a content standard from the same grade of the student's chronological age?
- Is it meaningful to the student? – Is the focus of instruction on a skill that is immediately useful or that will be useful in the near future?

The intent of the grade-level content standard must remain intact and instruction must occur using the same materials as all students (or an adapted version) and appropriate assistive technology.

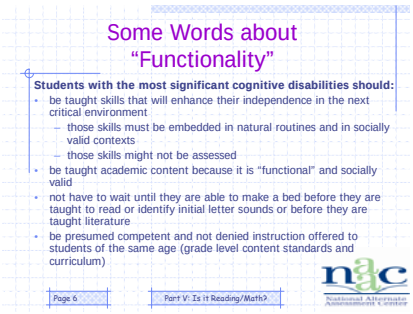




Functionality

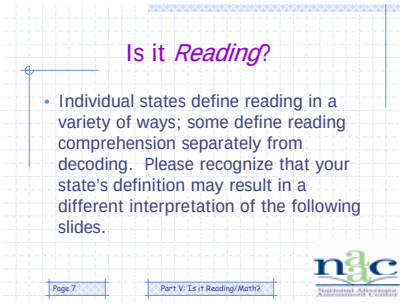
Historically, functionality has been defined as typical adult outcomes, or as skills that allow a student to perform in the community or adult life independently. As we become more familiar and skilled with the application of functionality, some professionals are beginning to question the interpretation or application of functionality and what is truly functional for students with the most significant cognitive and physical disabilities.

Additionally, many teachers question how to balance the traditional functional curriculum for students with the most significant cognitive disabilities with the need to assess and report student access to and progress within a state's general curriculum. Teachers express concerns that the importance of the functional curriculum for students with the most significant cognitive disabilities will be lost and replaced solely by the general education curriculum. However, it is understood that many aspects of the functional curriculum continue to be extremely important for these students. There is no attempt to replace teaching of the functional curriculum solely with the general curriculum; instead to seek a balance of the two. NCLB 2002 requires us to only assess a student's progress in the general curriculum. Functional skills are best addressed though the IEP.



For discussion about functionality using an example of one student, see Power point speaker notes.

Disclaimer about individual state definitions of reading

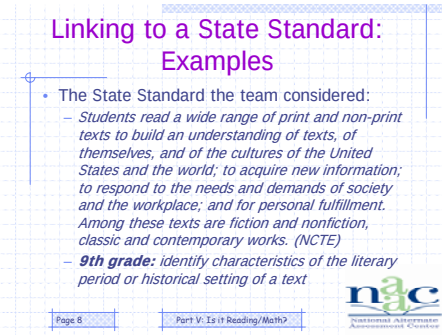


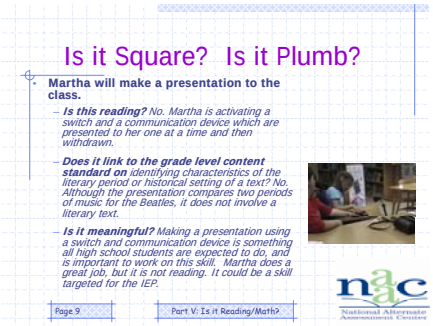
Linking to a State Standard

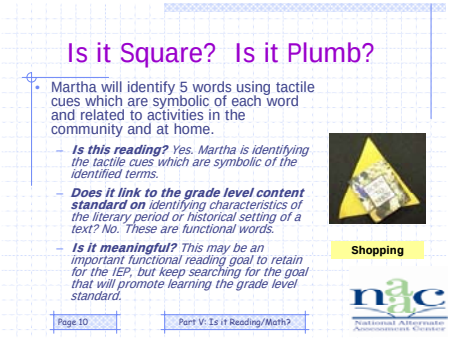
When trying to design instruction for all students, teachers should start with the content standard and determine what all students are expected to learn from the standard. Based on the standard, look at the instructional activities being taught and ask three questions about the instructional task: (1) Is this activity reading (or math, or science, etc.); (2) Is this activity meeting the grade level content standard for the chronological age of the student; (3) Is it meaningful to the student? The questions and process are the same whether we are looking at reading, math, science or social studies. However, we are focusing on reading and math.

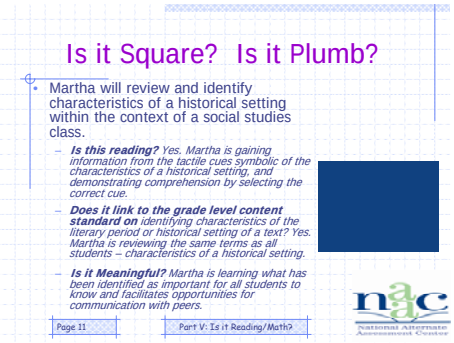
Ensure that you read the speaker notes for the slides about linking to the state standards for Martha, Jordan, Sarah, and Josh.

Martha is working on characteristics of the historical setting of a text.

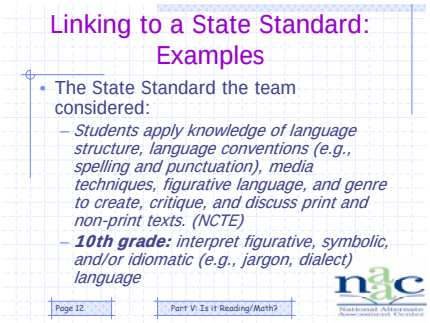


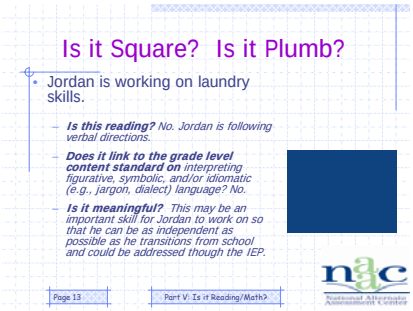


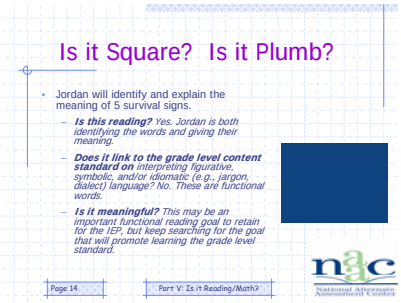


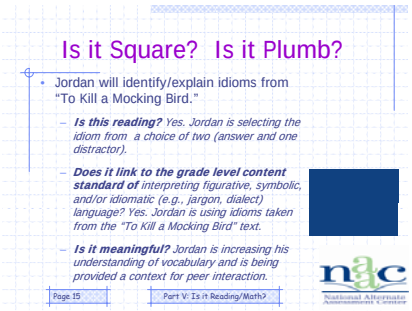


Jordan is working on interpreting figurative, symbolic, and/or idiomatic (e.g., jargon, dialect) language.

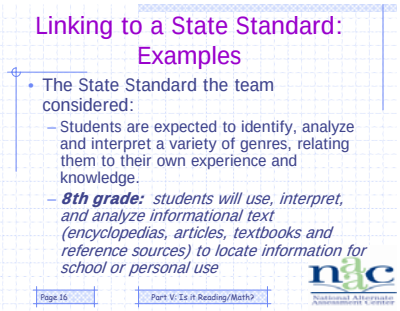


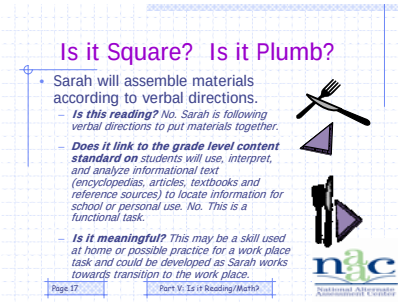


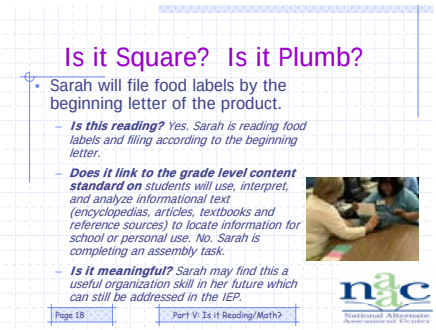


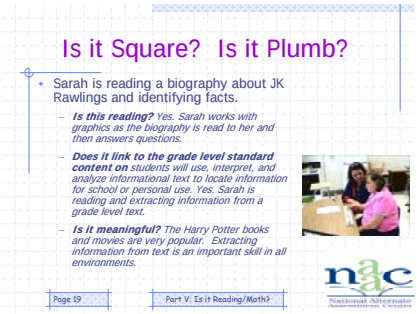


Sarah is working on using, interpreting, and analyzing informational text.









Josh is working on understanding the meaning of equivalent forms of expressions, equations, inequalities, and relations.

Linking to a State Standard: Examples

- The State Standard the team considered:
  - *Represent and analyze mathematical situations and structures using algebraic symbols.*
  - ***9th grade: understand the meaning of equivalent forms of expressions, equations, inequalities, and relations***

Page 20 | Part V: Is it Reading/Math?

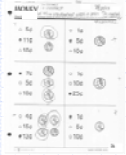
Is it Square? Is it Plumb?

- Josh will pour pre-measured ingredients into a mixing bowl.
  - ***Is this really math?*** *No. Josh has not participated in measuring.*
  - ***Does it link to the grade level content standard on*** *understanding the meaning of equivalent forms of expressions, equations, inequalities, and relations? N/A*
  - ***Is this meaningful?*** *This may be a skill to retain for the IEP in terms of following directions or motor development, but it does not promote understanding of mathematical procedures.*

Page 21 | Part V: Is it Reading/Math?

Is it Square? Is it Plumb?

- Josh will identify specific coins and match them to the correct amount.
  - ***Is this math?*** *Yes. Josh is working on money skills.*
  - ***Does it link to the grade level content standard on*** *understanding the meaning of equivalent forms of expressions, equations, inequalities, and relations? No. Typically this math skill is taught in the early grades.*
  - ***Is this meaningful?*** *The IEP team may keep this goal to promote functional independence, but keep searching for a closer link.*



Page 22 | Part V: Is it Reading/Math?

Is it Square? Is it Plumb?

- Josh will use pictures and manipulatives to solve for the variable.
  - ***Is this math?*** *Yes. Josh is solving for a variable.*
  - ***Does it link to the grade level content standard on*** *understanding the meaning of equivalent forms of expressions, equations, inequalities, and relations? No. Josh is not required to look at both sides of the equation.*
  - ***Is it meaningful?*** *It gives Josh another opportunity to problem solve.*

Page 23 | Part V: Is it Reading/Math?

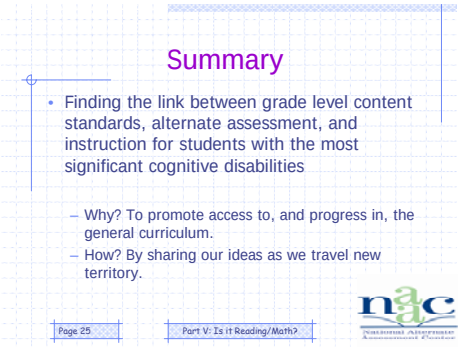
Is it Square? Is it Plumb?

- Josh uses manipulatives to solve for the variable within the equation.
  - ***Is it math?*** *Yes. Josh is working on equations.*
  - ***Does it link to the grade level content standard on*** *understanding the meaning of equivalent forms of expressions, equations, inequalities, and relations? Yes. Josh is working on linear equations.*
  - ***Is it meaningful?*** *Josh is strengthening his basic number sense, in addition to using higher order thinking skills.*

Page 24 | Part V: Is it Reading/Math?

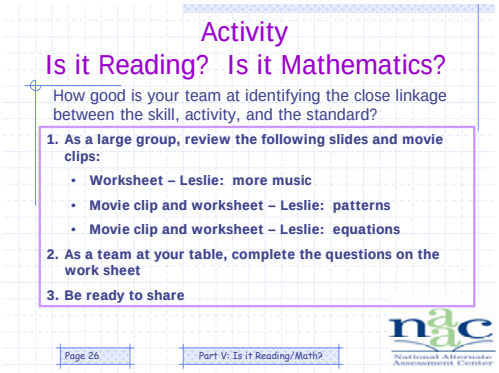
Summary

After viewing the previous slides on what it looks like to link the instruction of students with the most significant cognitive disabilities to the grade level content standards, it is important to consider that as special educators, we are no longer looking at modifying *what* we teach (a separate curriculum) but *how* we teach the same grade level content standards to all students.

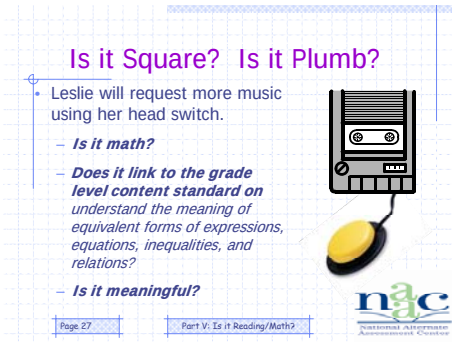


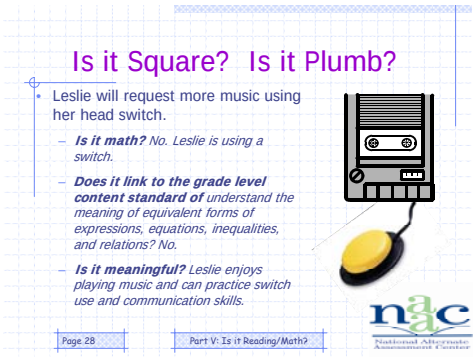
Activity

The activity is included to allow participants time to reflect and practice what they have learned in the session. Pass out the handouts provided and review the instructions for the activity.

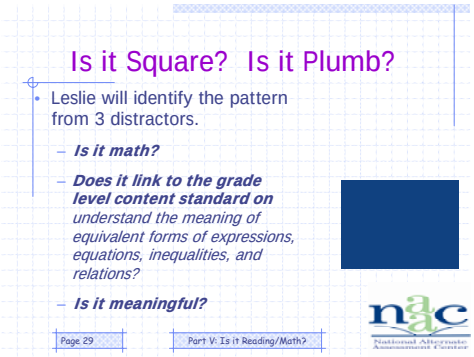


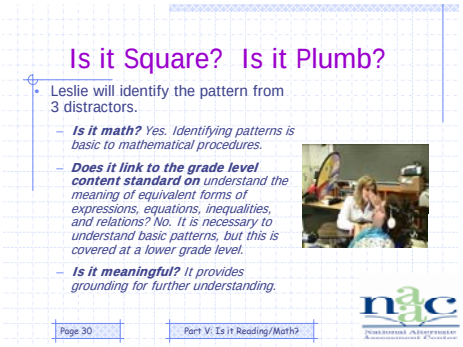
Review slide 27 with the group; then, allow participants to work in small groups to answer the three questions on the slide. Allow time for completion of the worksheet, sharing information, and discussion. Go over slide 28 with participants.



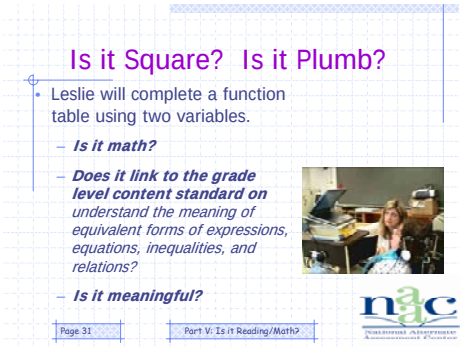


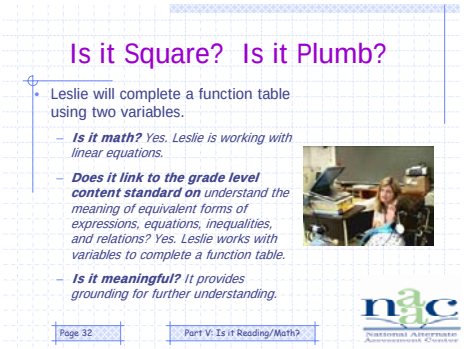
Review slide 29 with the group ensuring that you watch the video clip first. Allow participants to work in small groups to answer the three questions on the slide. Allow time for completion of the worksheet, sharing information, and discussion. Go over slide 30 with participants.



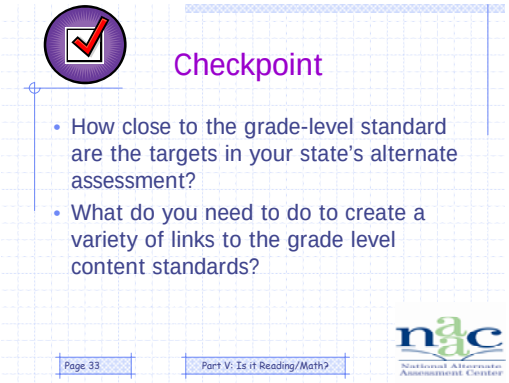


Review slide 31 with the group ensuring that you watch the video clip first. Allow participants to work in small groups to answer the three questions on the slide. Allow time for completion of the worksheet, sharing information, and discussion. Go over slide 32 with participants.



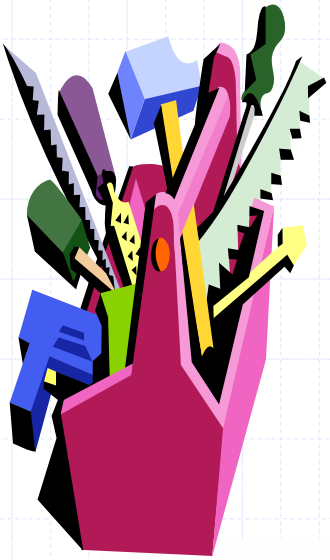


Checkpoint



Notes

Part VI: Designing the Content Linking Chart and Supporting Documents

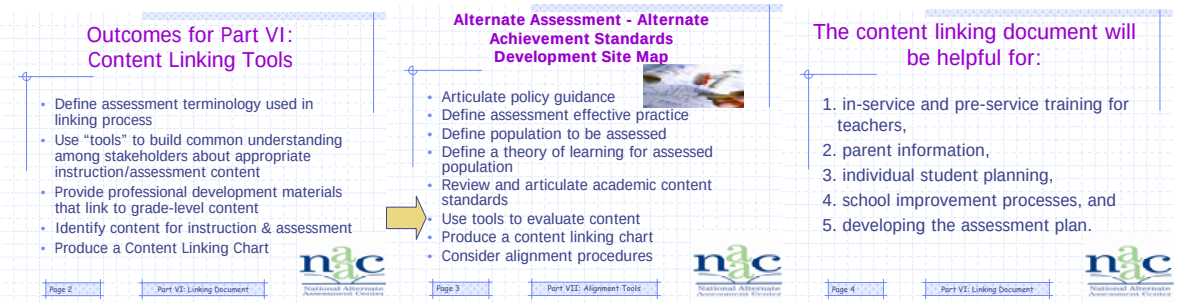


Content Linking Tools

National Alternate Assessment Center

Part VI: Designing the Content Linking Chart and Supporting Documents

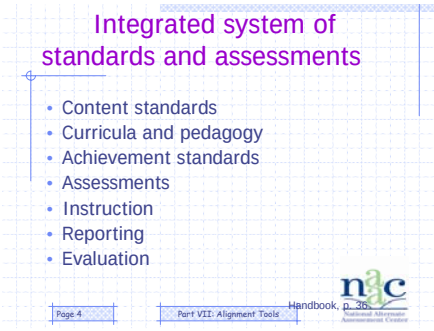
The Purpose of Part VI



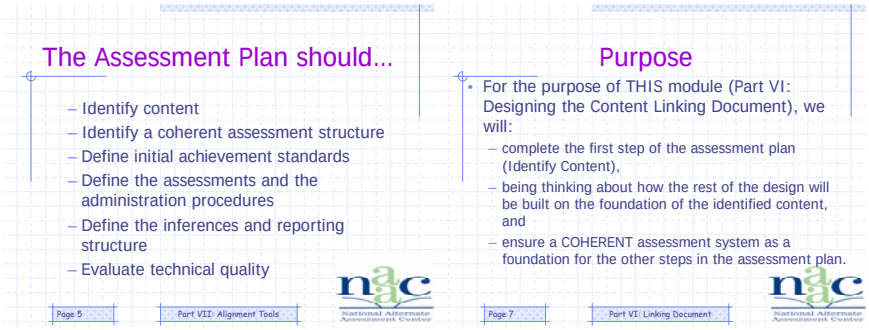
Part VI focuses primarily on the process for designing a content linking document and offers participants a foundation to developing and thinking about an assessment plan. We will revisit important terminology as all stakeholders will need to be familiar with these terms to complete the content linking document and to successfully think about the assessment plan. We will then think about creating professional development materials that link to grade-level content and finally produce a content linking chart. Our site map indicates the activities that will take place in this section.

This section deals almost equally with the cognition and observation vertices of the assessment triangle as it focuses primarily on designing a content linking document as it offers a foundation to thinking about an assessment plan for the state (identify content for instruction and assessment).

Trainer Note: We will walk participants through a set of steps designed to select content and write the initial descriptions of the achievement standards. Participants will work in small grade-level groups that include both general and special education teachers as well as content experts in reading and mathematics. Each team will draft a set of curriculum/assessment maps and evaluate each standard for use in the content blueprint.

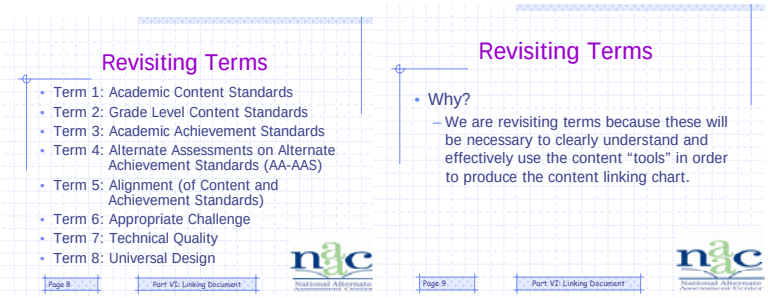


Hansche (1998) suggests that effective practice in assessment should result in an integrated system of standards and assessments. The essential elements in such a system are content standards (i.e., what students should know), curricula and pedagogy (i.e., how they should be taught), achievement standards (to what degree of proficiency), assessment, instruction, reporting and evaluation.



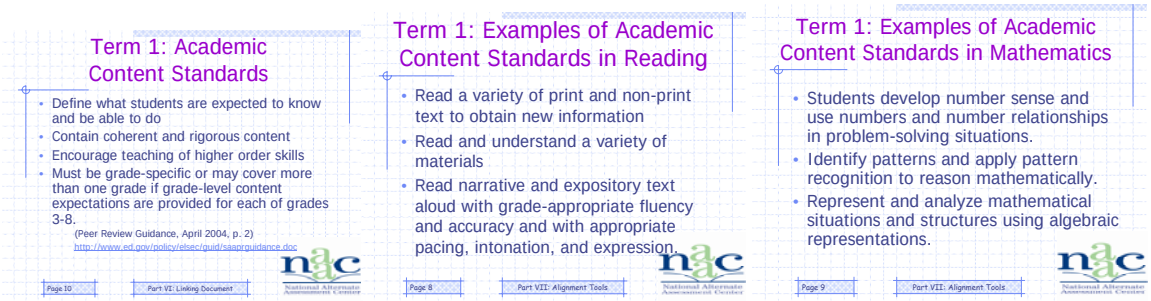
An assessment plan should identify the content of the assessment, a coherent structure, define the achievement standards, define the administration procedures, reporting structure, and finally evaluate the technical quality of the assessment instrument. We recommend that an alternate assessment plan be designed by a stakeholder group of professionals in measurement, special and general education, as well as parents or other significant participants. The plan for alternate assessments on alternate achievement standards should be built on linkages to the grade-level content then the other elements can be addressed more fully. For the purpose of Part VI: Designing the Content Linking Chart and Supporting Documents, we will complete the first step of the assessment plan which is to identify content. We will then begin thinking about how the rest of the assessment plan will be built upon this foundation to ensure a coherent assessment system.

We want to model alternate assessments on alternate achievement standards against this integrated system of standards and assessments. Therefore, we must develop assessments that identify and link to content standards, align with the curricula materials, as well as define reasonable but challenging achievement standards that will result in better student outcomes and improved instruction.



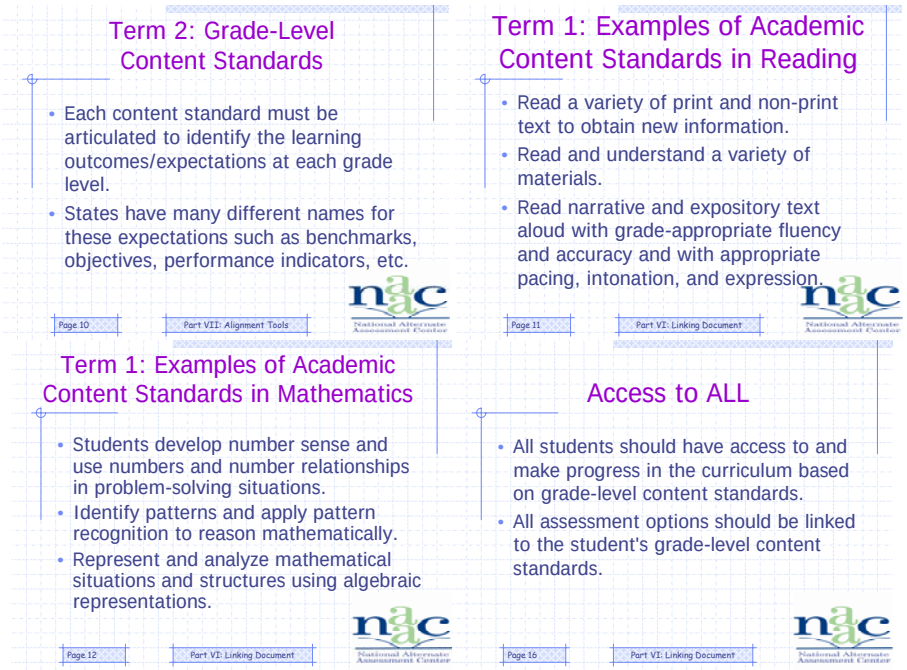
It is extremely important to revisit particular terminology within this section to help build a common understanding among stakeholders about instruction and assessment. We are revisiting these terms in order to clearly understand and effectively use the content "tools" to produce the content linking chart.

Academic Content Standards



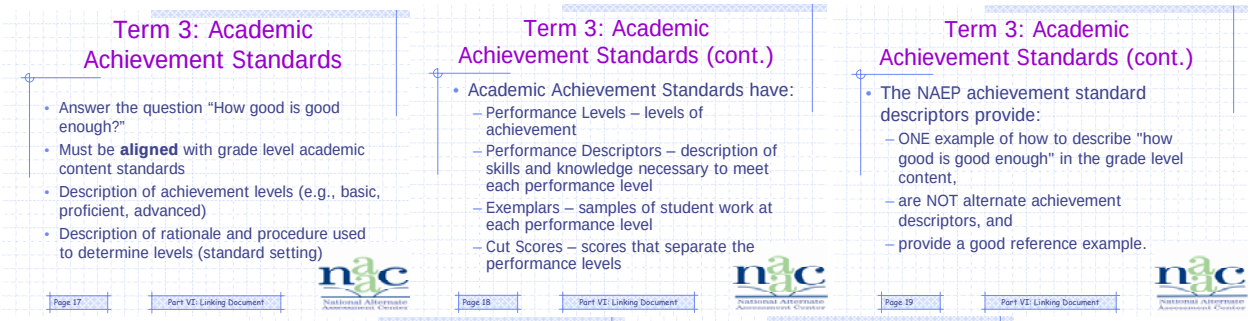
Academic content standards define what students should know and be able to do and are often grade or grade/band specific for grades 3-8. Examples of content standards from language arts and mathematics are provided. The purpose of this workshop is to assist states in defining and linking their content standards in reading and mathematics for alternate assessments on alternate achievement standards for students with the most significant cognitive disabilities to appropriate grade-level content.

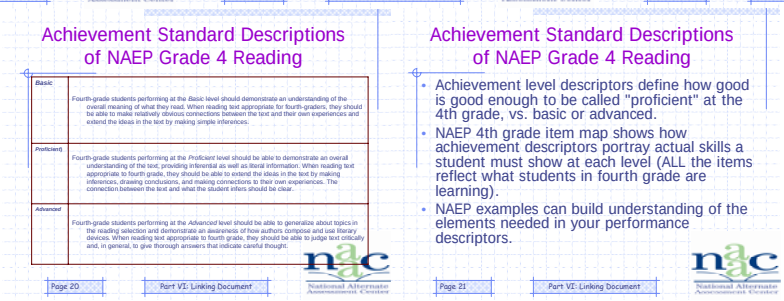
Grade-Level Content Standards

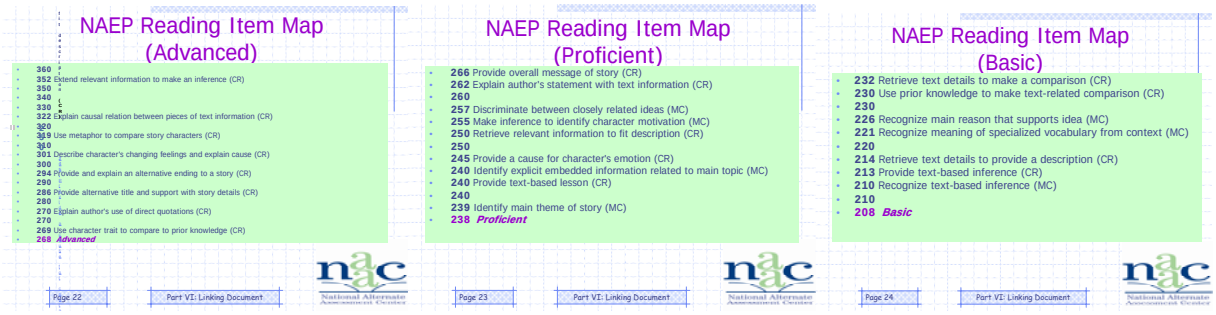


All students should have access to and make progress within the curriculum based on enrolled grade-level content standards. At the same time, all assessment options should be linked to the student's grade-level content standards.

Academic Achievement Standards

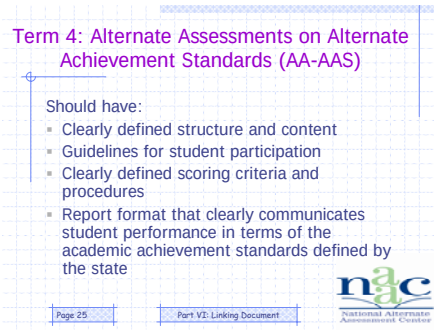






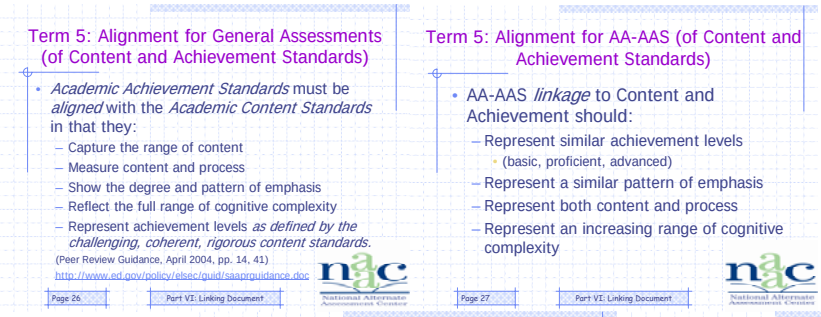
Academic achievement standards are summary descriptions of ***how well*** a student should demonstrate proficiency in a content domain and is often described in at least three levels (e.g., Basic, Proficient, or Advanced). Slide 20 is an example of the NAEP 4th grade reading achievement standards descriptors. Achievement level descriptors define how good is good enough to be called "proficient" at the 4th grade, vs. basic or advanced. By looking at examples of the corresponding 4th grade NAEP item map of the kinds of skills that a student must show at each level, you can see how the achievement descriptors fit the actual skills of students on tests - but ALL the items reflect what students in fourth grade are learning. These examples can help your stakeholders build understanding of what your proficiency descriptors should describe.

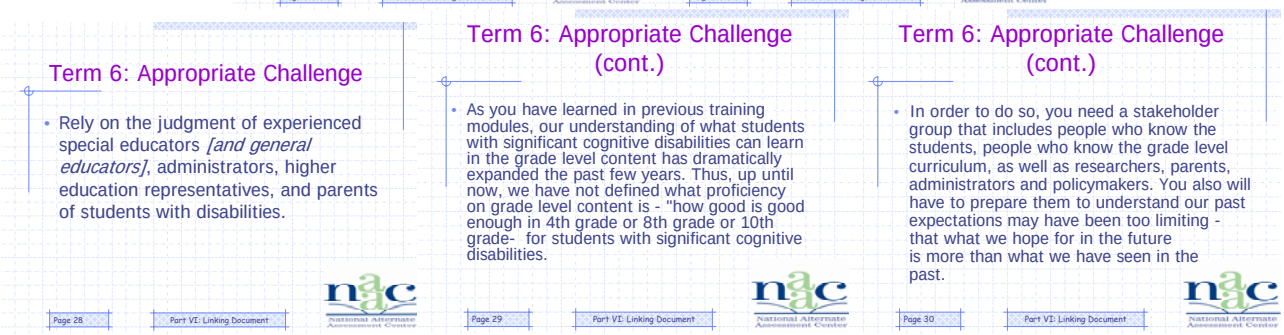
Alternate Assessments on Alternate Achievement Standards (AA-AAS)



Alternate assessments on alternate achievement standards must have clearly defined structure, content, procedures, scoring criteria and report format that communicates student results effectively. In the case of alternate assessments on alternate achievement standards, the correct identification/verification of student participants is essential to the assessment design. To do this, we propose that stakeholder groups design an assessment plan to guide the design and building of the assessment.

Alignment and Appropriate Challenge





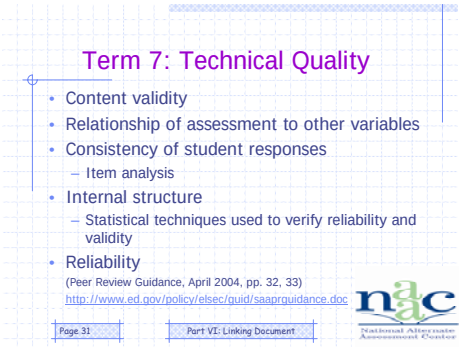
Alignment in the measurement world commonly refers to the extent to which the academic content standards are aligned to academic achievement standards in the following five characteristics: 1) range of content, 2) measurement of content and process, 3) the degree and pattern of emphasis, 4) the range of cognitive complexity and 5) representative achievement levels. Alternate assessments on alternate achievement standards for students with the most significant cognitive disabilities must be **linked** to content and achievement standards in that the same achievement levels must be represented, the pattern of emphasis at each grade is similar, measurement includes both content and process, and represent an increasing range of complexity. The Peer Review Guidance (USDOE, April 28, 2004) suggests that an appropriate level of challenge can be determined by relying on the judgment of a diverse stakeholder group that includes special educators, administrators, higher education representatives and families of students with disabilities. Effective practice would emphasize the importance of including general education and content specialists in the work group.

Alternate Achievement standards must be linked to grade-level content in order to promote access to the general curriculum as required by IDEA 97. The key is to achieve an appropriate level of challenge as judged by experienced professionals and stakeholders who understand the learning characteristics and theory of learning around the population of learners with the most significant cognitive disabilities. As you have learned in previous training modules, our understanding of what students with significant cognitive disabilities can learn in the grade level content has dramatically expanded the past few years. Thus, up until now, we have not defined what proficiency on grade level content is - "how good is good enough in 4th grade or 8th grade or 10th grade - for students with significant cognitive disabilities. In order to do so, you need a stakeholder group that includes people who know the students, people who know the grade level curriculum, as well as researchers, parents, administrators and policymakers. You also will have to prepare them to understand our past expectations may have been too limiting - that what we hope for in the future is more than what we have seen in the past.

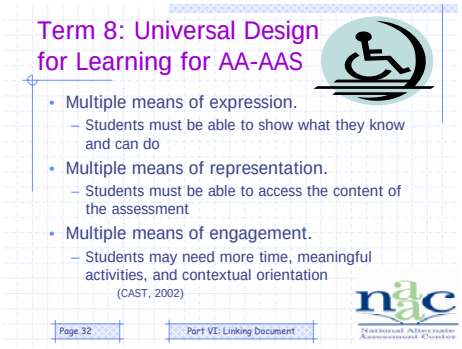
The achievement standard must be defined through a documented, validated standard setting process. This may result in grade-level content that is reduced in complexity, depth and breadth. There may be one or more alternate achievement standards. Alternate achievement standards should be linked and defined in such a way that supports individual growth across grade-level. It is important to remember for

students participating in alternate assessment on alternate achievement standards, that while required to link to grade level content standards the alternate assessment on alternate achievement standards will not be required to meet the same grade level achievement standards in regard to breadth, depth, and complexity.

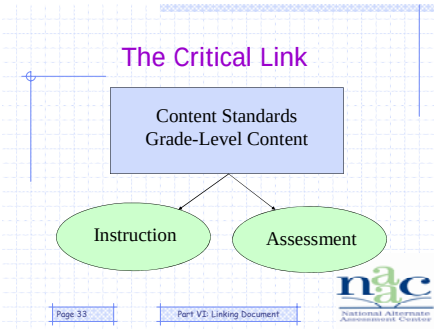
Technical Quality



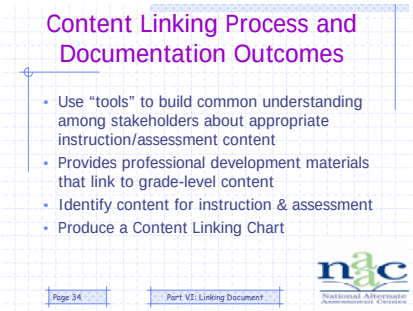
Technical quality encompasses at least five elements: content validity, the relationship of the assessment to other variables, consistency of student response, internal structure and reliability. The first step in defining technical quality of alternate assessments on alternate achievement standards is to define content validity. The purpose of this workshop is to assist states in determining the appropriate academic content for alternate assessments on alternate achievement standards for students with the most significant cognitive disabilities.

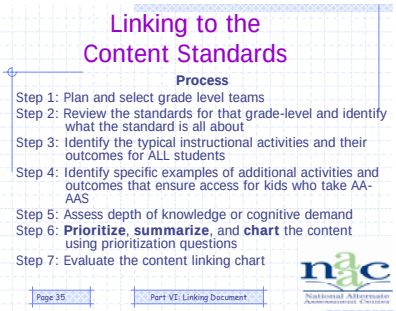


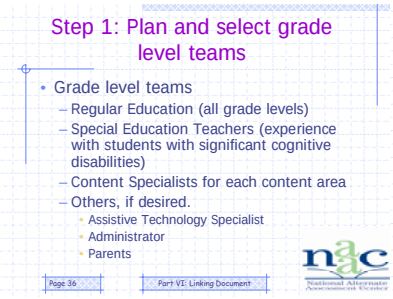
Universal Design as applied to alternate assessment means that consideration should be given to multiple means of expression, multiple means of representation, and multiple means of engagement.

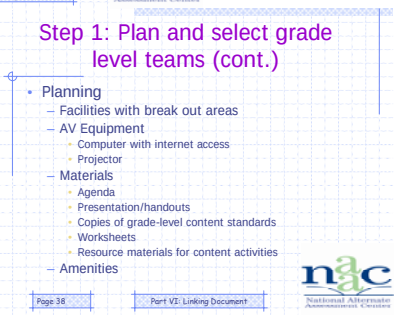


Since IDEA 1997 all students with disabilities are required to have access and have opportunity to progress in the general education curriculum. For students with disabilities to access the curriculum, they must have multiple ways in which content is presented and they can express what content they have learned. They also must have individually adapted ways to engage in daily classroom curricular activities. IDEA 2004 requires alternate assessments that are linked to grade-level content standards for all students so that states can measure the performance of all children including students with significant cognitive disabilities. It is unfair to students with disabilities to assess them on curriculum and content for which they have not had the opportunity to learn through lack of instruction in the format that is individually required based on the Individual Education Program (IEP). It is also necessary to assure students with significant cognitive disabilities be assessed in a format which they can access and express what they know and will engage participation and a response. So it is critical to provide a direct link between daily instruction in general education content, the state grade-level content standards on which instruction takes place, and the assessment content that is measured to demonstrate how much students learned after receiving that instruction.







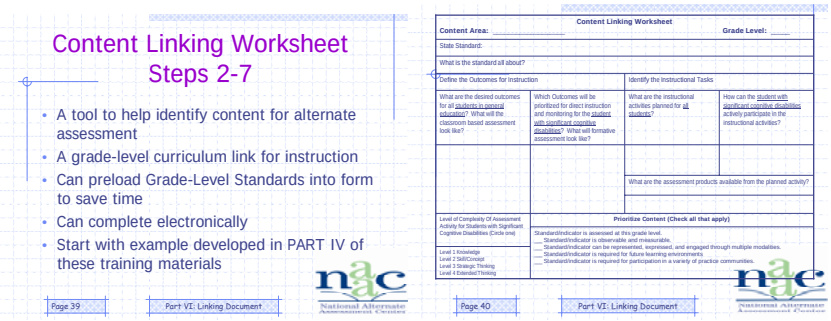


The process overview for linking to the content standards includes the seven steps listed in the slide above. **Step 1** requires that stakeholders select grade level teams and then divide up into grade-level teams with appropriate representation in each: general, special education teachers and/or content specialists at a minimum. Parents, administrators, assistive technology specialists, etc., can be added to each group as appropriate. Remember that who you choose to do this work makes a BIG difference in the quality of the product. Do not attempt this without your very best curriculum partners and special educators working with you on every step. Each team will review each of the content standards and

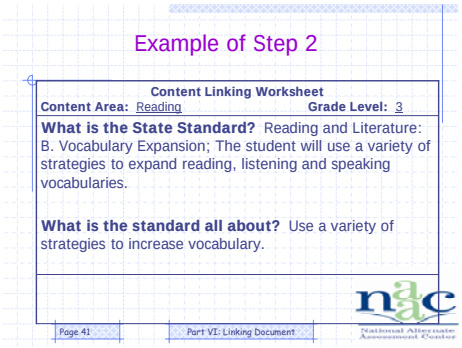
indicators if available. Slide 37 is a reminder of considerations when planning teams and securing rooms for the workday.

> **Trainer's Hint: Standards can be entered onto an electronic form that can be found in Appendix A prior to the work session. Each team should appoint a recorder. Laptop computers for each team would be a great way to get this done quickly.**

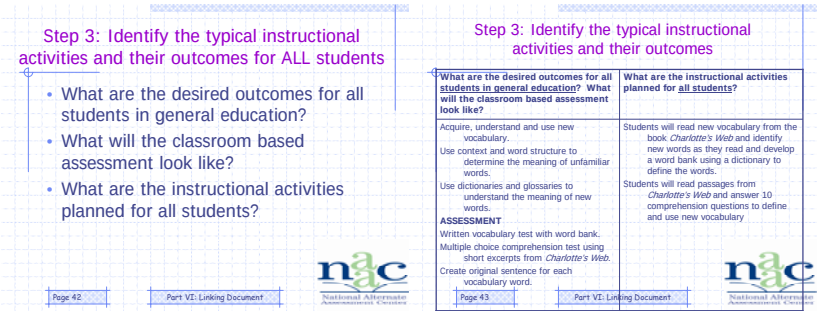
Process for Developing the Content Linking Worksheet



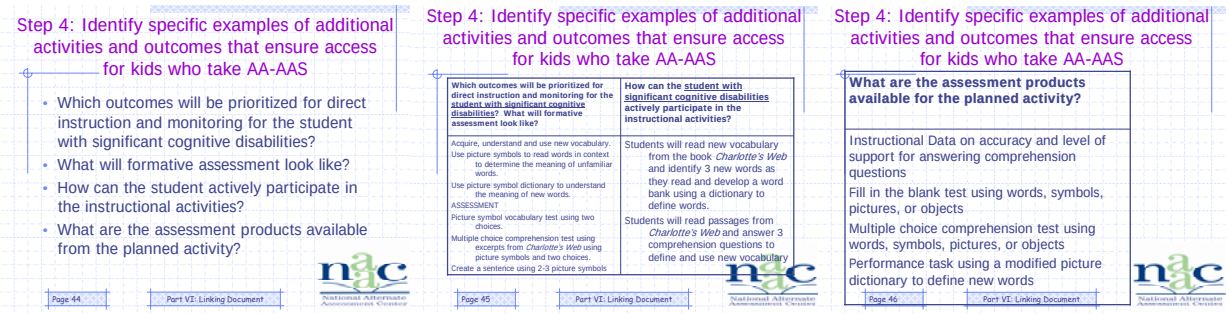
The Content Linking Worksheet is used to assist in providing a conduit to identify ways students with significant cognitive disabilities can access the grade-level standards using typical instructional activities and providing support and/or modified amount or complexity of the content and/or activity. After we demonstrate that the student can access grade-level content, then we can then provide ways to assess students. Once we have identified that we can provide access and assess on grade-level content, then we can prioritize content for inclusion in the alternate assessment by using a series of questions, summarizing, and charting our results.



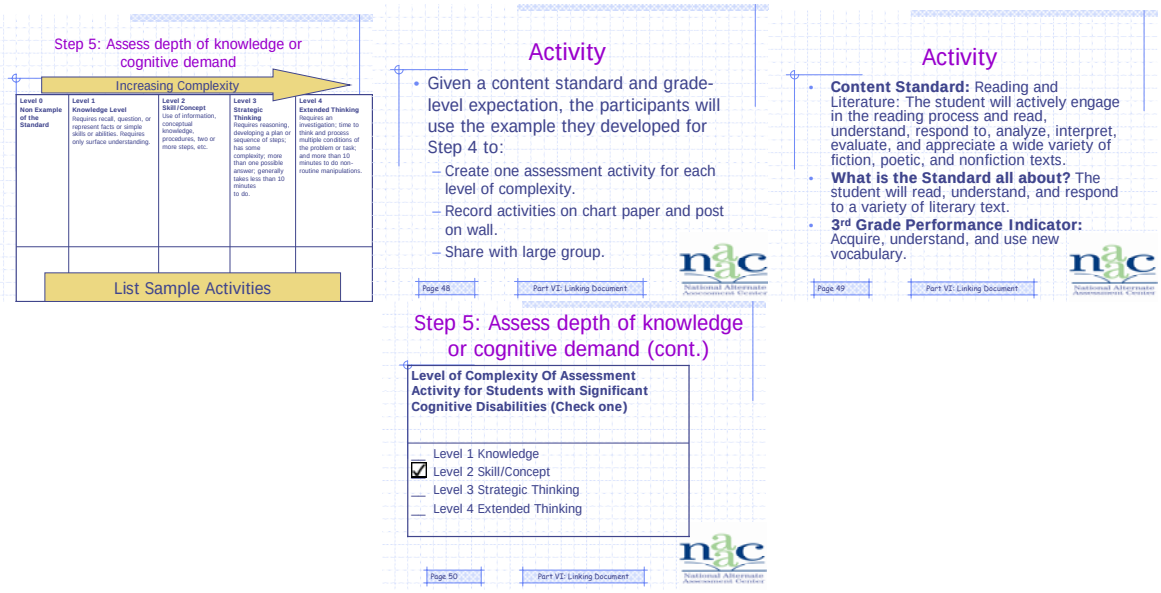
In **Step 2**, we will identify the State Content Standards in each content area and for each grade level and describe what the standard is all about (critical function, big idea, or essence of the standard). For this process you will need your grade-level standards and short term objectives, indicators, or performance standards which will show the outcomes for all students. You may preload your worksheets with the Grade-Level Standards to provide more time for the rest of the process if desired.



In **Step 3,** we will list the outcomes for all students for the grade-level standard and a typical instructional activity used to teach and assess the standard. The outcomes may be identified in your Grade-Level standards document, or you may have your content experts and general education teachers identify them. You may wish to have resources available for teachers to use to help in identifying appropriate grade-level activities. Please use the concepts of universal design when designing instructional activities.



In **Step 4,** we will list the outcomes for students with significant cognitive disabilities for the grade-level standard and ways in which these students can access/participate in the typical instructional activity used to teach and assess the standard. The outcomes may be the same or prioritized to the most important. This decision is made through collaboration of content specialists, general education teachers and special education teachers. Remember to think about the "highest expectations possible" for these students.



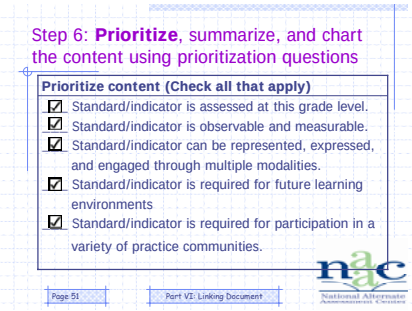
Step 5 requires us to understand the level of cognitive demand or depth of knowledge required in and assessment activity or item. We will use a group activity to help the group understand the concept of levels of cognitive demand. We will use Webb's model of cognitive demand for this activity and module. Your state may have their own model or another model they wish to use.

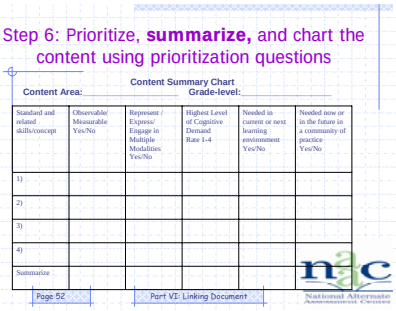
Step 5 Activity

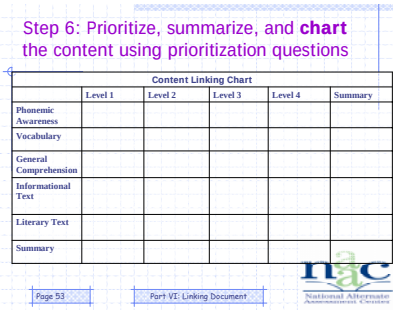
First, divide your group into smaller groups of 6-8 people. You should keep a variety of content specialists, regular educators, and special educators in each group. All are needed in each group.

The activity requires the team to identify at least one sample assessment activity at each level of cognitive demand and record them on chart paper to be posted and shared. Obviously, more activities can be identified at each cognitive demand level. For example: In the 10th grade mathematics activity, a Level 0 activity would be to identify two dimensional geometric shapes, while a Level 1 activity might have the student simply choose the correct polyhedron shape. We want to think about approaching the standard with less to more complex assessment activities. Teams may find that for some standards, higher levels of cognitive demand that can be assessed are difficult to determine. Trainers can utilize the activity in slides 47 and 48 to practice identifying activities at each level of cognitive demand.

After completion of the activity, slide number 50 will demonstrate the level of cognitive demand for the sample worksheet.







Step 6 uses a series of checks to help us prioritize the inclusion of the grade-content standard in the alternate assessment. The team checks all that apply to the grade level standard on the worksheet.

The first check, **"Standard/indicator is assessed at this grade-level"** is designed to assist teams in eliminating standards that may be needed by individual students but are not assessed in the general curriculum at the specified grade-level. This standard if not taught at this grade-level but is needed by the student can be included on the students Individualized Education Program (IEP). Eliminating standards that are assessed at a lower grade level may help reduce the observation demand placed on the teacher to assess a range of standards at a particular grade-level.

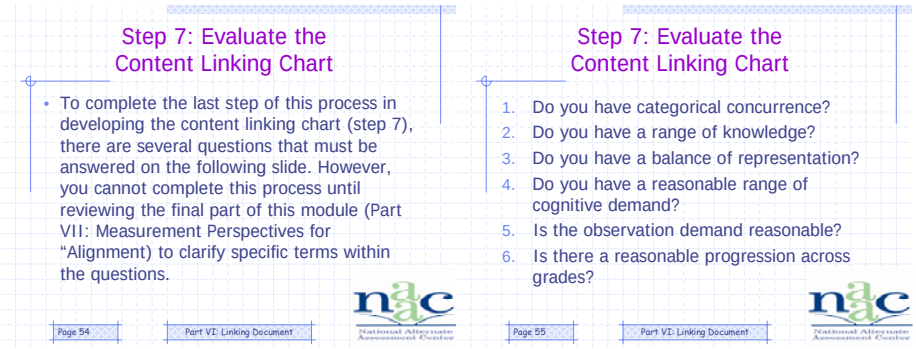
The second check, **"Standard/indicator can be observable and can be measurable"** allows the team to decide if the standard and its accompanying indicators can be assessed for this population of students.

The third check, **"Standard/indicator can be represented, expressed and engaged through multiple modalities"** asks the team to consider whether or not the standard could be used by a population of students who may need alternative means to understand the assessment item, respond to the assessment item, or engage the item without compromising the intent of the standard.

The fourth check asks the team to identify the **highest level of cognitive demand** that they were able to identify for the standard and its skills/concepts.

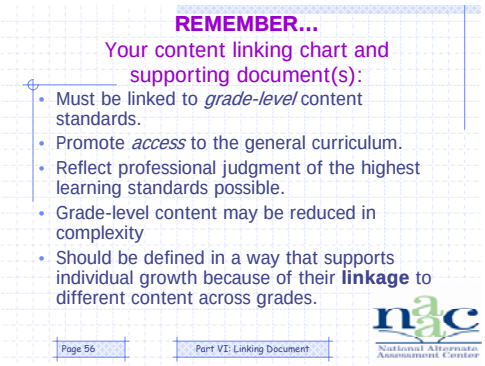
The fifth check asks the team to identify whether or not this standard and its skills/concepts are needed to **continue learning in this content area**.

The sixth check requires the team to consider whether or not the standard and its skills/concepts would be used **either now or in future communities of practice** (e.g., work, recreation, other academic endeavors).



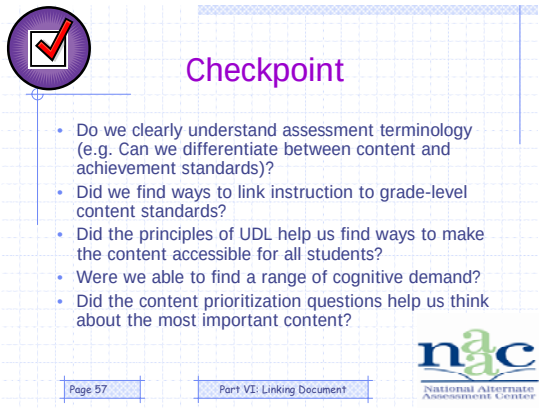
Step 7 requires the team to summarize the results of the prioritization questions from the content linking chart for each of the standards that were evaluated at that grade-level. In order to complete this last step in the process, several questions which appear on slide 55 must be answered. However, this section cannot be completed until reviewing part VII of this training module as this new vocabulary is defined within the final module. Therefore, as we are nearing the conclusion of part VI, remember we will have to learn new terminology from part VII to complete the final step of evaluating the content linking chart.

When your group of stakeholders decides to complete this step of the process (step 7), they must consider the questions within slide 55.



Your content linking document should be linked to grade-level content standards, promote access to the general curriculum, reflect professional judgment of the highest learning standards possible, may contain grade-level content reduced in complexity, and should be defined in a way that supports individual growth because of their linkage to different content across grades.

Final Checkpoint



Notes

Content Linking Worksheet

Content Area: Reading

Grade Level: 3

State Standard: What is the State Standard? Reading and Literature: B. Vocabulary Expansion; The student will use a variety of strategies to expand reading, listening and speaking vocabularies.			
What is the standard all about? Use a variety of strategies to increase vocabulary.			
Define the Outcomes for Instruction		Identify the Instructional Tasks	
What are the desired outcomes for all students in general education? What will the classroom based assessment look like?	Which Outcomes will be prioritized for direct instruction and monitoring for the student with significant cognitive disabilities? What will formative assessment look like?	What are the instructional activities planned for all students?	How can the student with significant cognitive disabilities actively participate in the instructional activities?
1. Acquire, understand and use new vocabulary. 2. Use context and word structure to determine the meaning of unfamiliar words. 3. Use dictionaries and glossaries to understand the meaning of new words. ASSESSMENT 1. Written vocabulary test with word bank. 2. Multiple choice comprehension test using short excerpts from *Charlotte's Web*. 3. Create original sentence for each vocabulary word.	1. Acquire, understand and use new vocabulary. 2. Use picture symbols to read words in context to determine the meaning of unfamiliar words. 3. Use picture symbol dictionary to understand the meaning of new words. ASSESSMENT 1. Picture symbol vocabulary test using two choices. 2. Multiple choice comprehension test using excerpts from *Charlotte's Web* using picture symbols and two choices. Create a sentence using 2-3	1. Students will read new vocabulary from the book *Charlotte's Web* and identify new words as they read and develop a word bank using a dictionary to define the words. Students will read passages from *Charlotte's Web* and answer 10 comprehension questions to define and use new vocabulary.	1. Students will read new vocabulary from the book *Charlotte's Web* and identify 5 new words as they read and develop a word using a dictionary to define words. 2. Students will read passages from *Charlotte's Web* and answer 5 comprehension questions to define and use new vocabulary POSSIBLE SUPPORTS • Audio CD or tape • Simplified text/book summary • Picture symbols with/without words • Pictures

	picture symbols		• Object or tactile cue Story and/or response

		What are the assessment products available from the planned activity?
		Student work product • Multiple choice using words, pictures, symbols, objects, etc. • Fill in the blank using words, pictures, symbols, objects, etc. • Teacher/student data chart of accuracy of performance and level of prompt
Level of Complexity Of Assessment Activity for Students with Significant Cognitive Disabilities (Circle one)	Prioritize content (Check all that apply)	
___ Level 1 Knowledge _X_ Level 2 Skill/Concept ___ Level 3 Strategic Thinking ___ Level 4 Extended Thinking	_X__ Standard/indicator is assessed at this grade level. _X__ Standard/indicator is observable and measurable. _X__ Standard/indicator can be represented, expressed, and engaged through multiple modalities. _X__ Standard/indicator is required for future learning environments _X__ Standard/indicator is required for participation in a variety of practice communities.	

Content Linking Worksheet

Content Area: Mathematics

Grade Level: 3

State Standard: Data and Statistics-Represent and interpret data in real-world and mathematical problems.			
What is the standard all about? Organize, display, read and interpret data using a variety of tables, graphs and charts.			
Define the Outcomes for Instruction		**Identify the Instructional Tasks**	
What are the desired outcomes for all students in general education? What will the classroom based assessment look like?	Which Outcomes will be prioritized for direct instruction and monitoring for the student with significant cognitive disabilities? What will formative assessment look like?	What are the instructional activities planned for all students?	How can the student with significant cognitive disabilities actively participate in the instructional activities?
1. Read and interpret data from circle graphs using halves, thirds and quarters. 2. Collect data using observations or surveys and represent the data with pictographs and line plots with appropriate title and key. Assessment: 1. Written test with multiple choice, constructed responses. 2. Given a table of data, students will construct and label a line graph.	1. Read and interpret data from circle graphs using halves, thirds and quarters. 2. Collect data using observations or surveys and represent the data with pictographs and line plots with appropriate title and key. Assessment: 1. Orally presented test with multiple choice, constructed responses using 3-D models. Given an object table of data and a textured line graph template, student will construct and label a line graph.	1. Students will read/observe and describe data on a variety of circle graphs on a worksheet. 2. Students in a small group will select a topic and design an observational study, record data on a object/pictograph and each student will display results on a line graph. 3. Students will answer questions about their data and graph.	1. Student will read/observe and match data (presented on object tables) to a variety of circle graphs using 3-D models. 2. Student in a small group will select a topic and design an observational study, record data on an object/pictograph and student will display results on a textured line graph. 3. Student will answer questions about their data and graph. Possible Supports • Textured graph • Removable labels on graph • Picture symbols • Word bank • Graphics to support answer • Yes/No communication aid Classroom Suite authoring software to create activity (Intelletalk/IntelliTools)
		What are the assessment products available from the planned activity?	

<table>
<tr><td></td><td></td><td>Student work product
• Yes/No questions about data and graph
• Multiple choice questions about data and grap
• Presentation of data scored with rubric
Teacher/student data and chart of accuracy and level of prompt</td></tr>
<tr><td rowspan="2">Level of Complexity Of Assessment Activity for Students with Significant Cognitive Disabilities (Circle one)</td><td colspan="2">Prioritize content (Check all that apply)</td></tr>
<tr><td>__ Level 1 Knowledge
_X_ Level 2 Skill/Concept
___ Level 3 Strategic Thinking
___ Level 4 Extended Thinking</td><td colspan="2">_X__ Standard/indicator is assessed at this grade level.
_X__ Standard/indicator is observable and measurable.
_X__ Standard/indicator can be represented, expressed, and engaged through multiple modalities.
_X__ Standard/indicator is required for future learning environments
_X__ Standard/indicator is required for participation in a variety of practice communities.</td></tr>
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Content Linking Worksheet

Content Area: Reading

Grade Level: 8

State Standard: Reading and Literature: The student will actively engage in the reading process and read, understand, respond to, analyze, interpret, evaluate and appreciate a wide variety of fiction, poetic and nonfiction texts.			
What is the standard all about? The student will read, understand and respond to a variety of literary text.			
Define the Outcomes for Instruction		Identify the Instructional Tasks	
What are the desired outcomes for all students in general education? What will the classroom based assessment look like?	Which Outcomes will be prioritized for direct instruction and monitoring for the student with significant cognitive disabilities? What will formative assessment look like?	What are the instructional activities planned for all students?	How can the student with significant cognitive disabilities actively participate in the instructional activities?
1. Read a variety of high quality, traditional, classical and contemporary literary works specific to America, as well as significant works from other countries. 2. Analyze a traditional, classical and contemporary literary works using the appropriate structural elements and form of the genre. 3. Analyze a traditional, classical and contemporary literary works to relate the author' voice and style, intended audience, message or theme and historical context of the piece. 4. Read and respond to a variety of fiction, poetic and nonfiction texts using ideas and details from the text to support reactions and make literary connections. Assessment: 1. Written test with multiple	1. Read variety of high quality, traditional, classical and contemporary literary works with audio tape and related objects specific to America, as well as significant works from other countries. 2. Classify a work as traditional, classical and contemporary literary using representative objects and match to the appropriate structural form and genre. 3. Match literary works to the author, intended audience, message or theme and historical context of the piece using audio tapes and representative objects. 4. Read and respond using audio tapes and representative objects to a variety of fiction, poetic and nonfiction texts. Assessment: 1. Written test with multiple choice, constructed response and open ended questions using,	1. Students will read/listen to three books *Call of the Wild*, *The Outsiders*, and *Beowulf*. 2. Students will describe and compare the structure that is used in each piece using a graphic organizer. 3. Students will produce a book description and review for each book to be published on-line. 4. Students will create an illustration for each book to be included with the book review.	1. Student will read/listen to three books *Call of the Wild*, *The Outsiders*, and *Beowulf* 2. Student will describe and compare the structure that is used in each piece using a graphic organizer. 3. Student will produce a book description and for each book to be published on-line. 4. Student will create an illustration for each book to be included with the book review. Possible Supports • Audio CD or tape with/without switch • Step-by-step communication aid • Simplified text/book summary • Picture or symbols with/without words • Braille • Object or tactile cue story and/or response

choice, constructed response and open ended questions. 2. Student book reviews and illustrations	picture, symbols and/or words, etc. 2. Student book reviews using picture symbols, and/or words, etc.		• Story web Textured pictures

		What are the assessment products available from the planned activity?
		Student work product: • Completed graphic organizers • Book descriptions scored with a rubric • Book illustrations scored with a rubric Teacher/student data chart. of scores and level of prompt
Level of Complexity Of Assessment Activity for Students with Significant Cognitive Disabilities (Circle one)	Prioritize content (Check all that apply)	
___ Level 1 Knowledge ___ Level 2 Skill/Concept ___ Level 3 Strategic Thinking _X_ Level 4 Extended Thinking	_X__ Standard/indicator is assessed at this grade level. _X__ Standard/indicator is observable and measurable. _X__ Standard/indicator can be represented, expressed, and engaged through multiple modalities. _X__ Standard/indicator is required for future learning environments _X__ Standard/indicator is required for participation in a variety of practice communities.	

Content Linking Worksheet

Content Area: Mathematics

Grade Level: 10

State Standard: V. SPATIAL SENSE, GEOMETRY AND MEASUREMENT- A. Spatial Sense, Use models to represent and understand two- and three-dimensional shapes and how various motions affect them. Recognize the relationship between different representations of the same shape.			
What is the standard all about? 1. Use models and visualization to understand and represent three-dimensional objects and their cross sections from different perspectives.			
Define the Outcomes for Instruction		**Identify the Instructional Tasks**	
What are the desired outcomes for all students in general education? What will the classroom based assessment look like?	Which Outcomes will be prioritized for direct instruction and monitoring for the student with significant cognitive disabilities? What will formative assessment look like?	What are the instructional activities planned for all students?	How can the student with significant cognitive disabilities actively participate in the instructional activities?
1. Use models of solid geometric figures and visualization to understand and represent three-dimensional objects and their cross sections from different perspectives. Assessment: 1. Student work samples 2. Written test using 3-D line drawings with multiple choice and constructed response questions. 3. Rubric score using custom rubric for presentation.	1. Use models of solid geometric figures and visualization to understand and represent three-dimensional objects and their cross sections from different perspectives. Assessment: 1. Student work samples 2. Oral questions using 3-D models of geometric figures and cross-sections. 3. Rubric score using custom rubric for presentation.	1. Create models of polyhedrons (i.e., pyramid, cube), a cone, a cylinder, and a sphere using a variety of materials and/or technology. 2. Create models of cross-sections of polyhedrons (i.e., pyramid, cube), a cone, a cylinder, and a sphere using a variety of materials. 3. Prepare and give a presentation that describes/explains models and cross-sections and method used to construct them.	1. Create models of polyhedrons (i.e., pyramid, cube), a cone, a cylinder, and a sphere using a variety of materials and/or technology. 2. Create models of cross-sections of polyhedrons (i.e., pyramid, cube), a cone, a cylinder, and a sphere using a variety of materials and/or technology. 3. Prepare and give a presentation that describes/explains models and cross-sections and method used to construct them. POSSIBLE SUPPORTS • Switch operated multimedia activity to create model • Puzzle • Textured shapes • Raised line drawing • Communication devise to present

			3D prefab 2-part model

		What are the assessment products available from the planned activity?
		Student work product: • Model of solid geometric figures scored with rubric • Student Presentation scored with rubric • Yes/No questions about geometric models • Multiple choice questions about geometric models Teacher/student data chart on accuracy and level of prompt
Level of Complexity Of Assessment Activity for Students with Significant Cognitive Disabilities (Circle one)	Prioritize content (Check all that apply)	
___ Level 1 Knowledge ___ Level 2 Skill/Concept _X_ Level 3 Strategic Thinking ___ Level 4 Extended Thinking	_X__ Standard/indicator is assessed at this grade level. _X__ Standard/indicator is observable and measurable. _X__ Standard/indicator can be represented, expressed, and engaged through multiple modalities. _X__ Standard/indicator is required for future learning environments _X__ Standard/indicator is required for participation in a variety of practice communities.	

Content Summary Chart

Content Area: _____ Grade-level: _____

Standard and related skills/concepts	**Observable Measurable** **YES/NO**	**Represent/ Express/ Engage in multiple modalities** **YES/NO**	**Highest Level of Cognitive Demand** **Rate 1-4**	**Needed in current or next learning environment** **YES/NO**	**Needed now or in the future in a community of practice** **YES/NO**
1)					
2)					
3)					
4)					
5)					
6)					
7)					
8)					
9)					
10)					
Summarize					

Reading
Categorical Concurrence/Cognitive Demand/Balance of Representation

Directions: Indicate the number of standards/skills/concepts/assessment items in each area according to the 4 levels of cognitive demand.

Content Linking Chart					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Summary**
Phonemic Awareness					
Vocabulary					
General Comprehension					
Informational Text					
Literary Text					
Summary					

References

Hansche, L.N. (1998). *Handbook for the Development of Performance Standards: Meeting the Requirements of Title I.*

Kleinert, H. L., & Kearns, J. F. (1999). A validation of the performance indicators and learner outcomes of Kentucky's alternate assessment for students with significant disabilities. *The Association for Persons with Severe Handicaps, 24(2),* 100-110.

U. S. Department of Education. (2004). *Standards and assessments: Peer review guidance: Information and examples for meeting requirements of the No Child Left Behind Act of 2001*. Office of Elementary and Secondary Education Washington, D.C.

U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Reading Assessment. http://nces.ed.gov/nationsreportcard/reading/achieveall.asp.

References for Part VI:
Designing the Content Linking Chart and Supporting Documents

Hansche, L.N. (1998). *Handbook for the Development of Performance Standards: Meeting the Requirements of Title I*.

Kleinert, H. L., & Kearns, J. F. (1999). A validation of the performance indicators and learner outcomes of Kentucky's alternate assessment for students with significant disabilities. *The Association for Persons with Severe Handicaps, 24(2),* 100-110.

U. S. Department of Education. (2004). *Standards and assessments: Peer review guidance: Information and examples for meeting requirements of the No Child Left Behind Act of 2001*. Office of Elementary and Secondary Education Washington, D.C.

U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Reading Assessment. http://nces.ed.gov/nationsreportcard/reading/achieveall.asp.

Ref. Type: Journal

Notes: Journal article

Title: A validation of the performance indicators and leaner outcomes of Kentucky's alternate assessment for students with significant disabilities.

Authors: Kleinert, H. L., & Kearns, J. F.

Pub. Date: 1999

Source: The Association for Persons with Severe Handicaps

Vol, Issue: 24, 2

Publisher:

Page #: 100-110

Keywords: validation, alternate assessment, cognitive disabilities

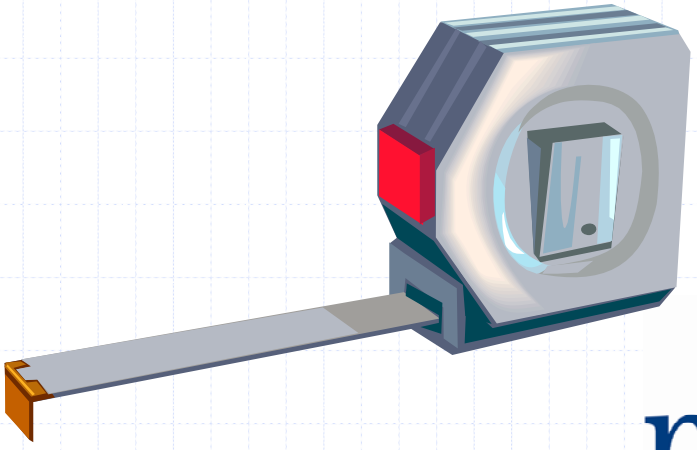
Abstract:

Participants: A total of 44 national authorities in best practices for students with moderate and severe cognitive disabilities participated in this study.

Test Design: The purpose of this study was to conduct an expert validation of Kentucky's approach to alternate assessment for students with significant cognitive disabilities. Participants were asked to fill out a survey that asked questions about performance indicators and academic expectations for the state of Kentucky. All written comments included with the survey were typed and categorized into major themes.

Findings: Results indicated that in terms of the core of best practices embodied in the performance criteria for Kentucky's alternate assessment, there was a high degree of professional congruence. However participants also raised some concerns about the extent to which more limited learner outcomes have been identified for students with significant disabilities and whether the alternate assessment was sufficiently aligned to general curricular expectations for all students.

Part VII: Measurement Perspectives for "Alignment"

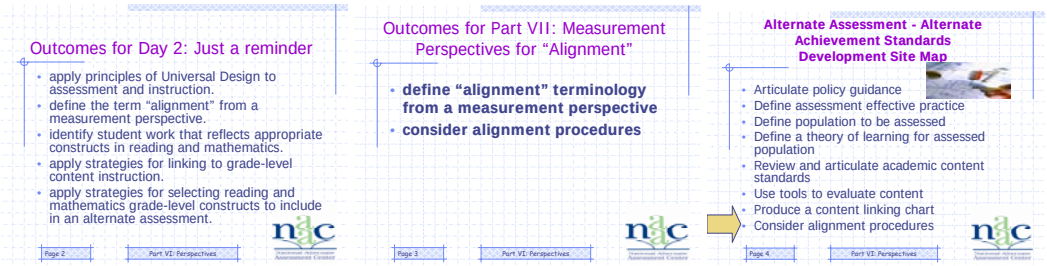


National Alternate Assessment Center

Part VII: Measurement Perspectives for "Alignment"

Purpose of Part VII

The purpose of Part VII is to define "alignment" terminology from a measurement perspective, consider a variety of alignment procedures, and apply strategies for linking to grade-level content instruction.



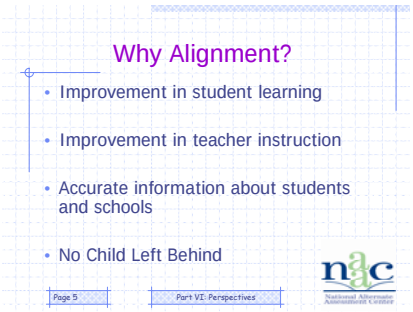
Trainer's Note: This presentation is designed to stand alone. Therefore, you will find elements of Part I: Overview, Terminology, Theory, and Research in this presentation.

This section deals approximately equally between both the observation and cognition vertices. It may connect slightly heavier in terms of the observation vertex as it deals with measuring student performance(s) but also strongly connects with the cognition vertex by identifying just what it is that students should know and be able to do.

The Importance of Alignment

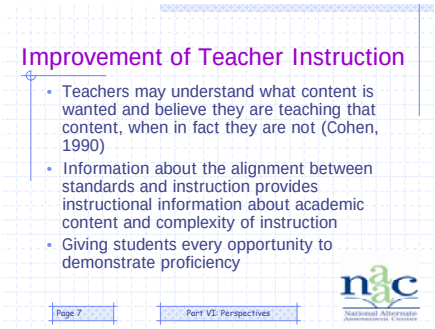
We sometimes assume that instructional systems are driven by academic content standards, which are translated into assessment, curriculum materials, instruction, and professional development. Research has shown that teachers may understand what content is wanted and believe they are teaching that content, when in fact they are not (Cohen, 1990; Porter, 2002). Improvements in student learning will depend on how well assessment, curriculum, and instruction are *aligned* and reinforce a common set of learning goals, and on whether instruction shifts in response to the information gained from assessments (National Research Council, 2001).

Accurate inferences about student achievement and growth over time can only be made when there is alignment between the standards (expectations) and assessments; from this perspective, alignment has both content and consequential validity implications (Bhola, Impara, & Buckendahl, 2003).

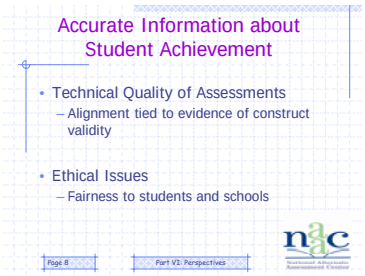


Alignment has great potential to improve the education of all students. Students with significant disabilities who receive instruction that is aligned to state content standards may have an opportunity to demonstrate learning academic content. Students who are assessed with items that are aligned to state content standards can demonstrate measurable levels of growth. Finally, students who receive instruction that is aligned to the assessment have a greater chance of demonstrating proficiency.

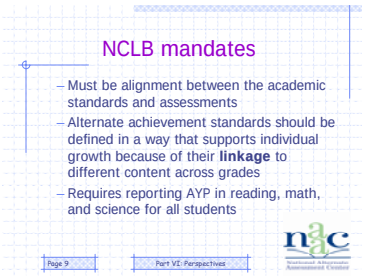
Standards-based educational reform aims to focus educational resources, efforts, and energy towards students' achievement. Improvements in student learning will depend on how well assessment, curriculum, and instruction are aligned and reinforce a common set of learning goals, and on whether instruction shifts in response to the information gained from assessments (National Research Council, 1999).



There is great potential for teachers to provide access to the general curriculum when they align their instruction to the content standards. Earlier modules described how teachers can best foster this access and opportunities. If instruction and assessments are aligned, the data provided from the assessments can inform teaching and support student growth.

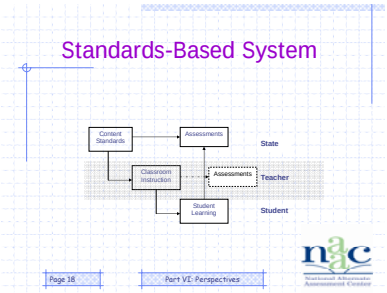


Examining the alignment between standards and assessments provides one avenue for examining evidence for score interpretation. Evidence of content representativeness of an assessment provides test users with information about the inferences that can be made from an assessment. It would be a disservice to students and schools to make judgments about achievement of academic expectations based on assessments that were not aligned to content standards.



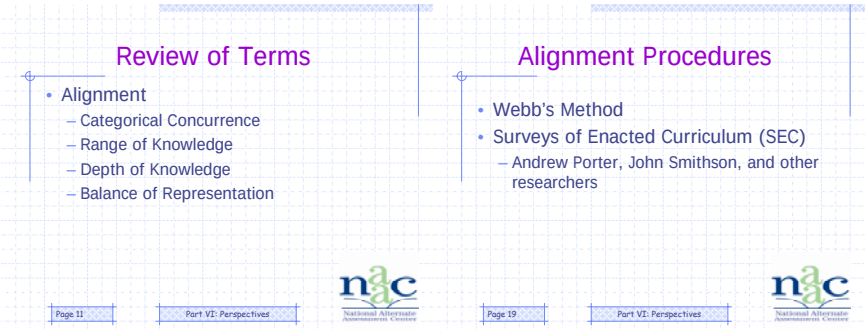
No Child Left Behind has mandated that states demonstrate alignment between the state academic standards and all assessments, including alternate assessments. Because alignment between the standards and assessments must be clearly described and documented, teachers need to track the links between the content, instruction, and the assessment. For example, teachers of students with significant disabilities have to identify each student's needs based on the student's grade level content standards. From these and potentially other needs, the student's IEP is written and instruction is designed. Students are then assessed based on the instruction they receive in the selected grade level standards in an alternate assessment. Assessments are then scored and student performance is then judged against alternate achievement standards. It is critical that alignment occurs between the three areas.

Standards-Based System



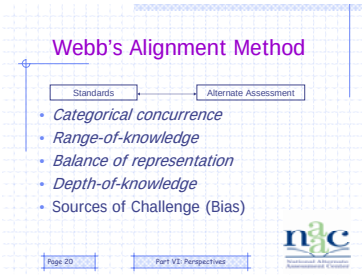
The ultimate goal of standards-based reform is to improve student learning and teacher instruction. For this to occur, there needs to be a high degree of alignment between the academic content standards, assessments, and ongoing classroom instruction.

Alignment Procedures



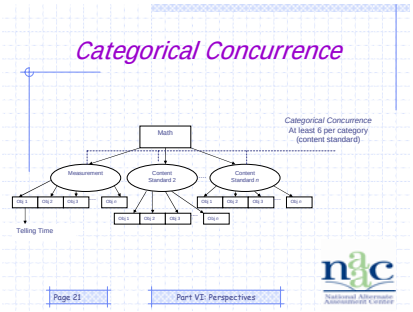
Procedures for evaluating the alignment of standards, instruction, and assessments and research into the effectiveness of these alignment procedures are still emerging, and four of the more promising alignment methods can be found at the Council of Chief State School Officers website (http://www.ccsso.org/). We will briefly present two of the four alignment methods today, one by Norman Webb and the second developed by Andrew Porter, John Smithson, and other researchers called Surveys of Enacted Curriculum (SEC). Webb's alignment procedure examines the alignment between standards and assessments and SEC examines the alignment among standards, assessments, and instruction.

Webb's Alignment Method



First we will start with Webb's alignment method. Norman Webb provides a systematic procedure for quantifying the degree of alignment of content standards and assessments. Qualitative expert judgments and quantified coding produce a set of statistics that examine different dimensions of alignment. Webb (1997) recommends several criteria for examining alignment between content standards and assessments, which not only examines the link between the two components, but provides information about the breadth and depth of the alignment.

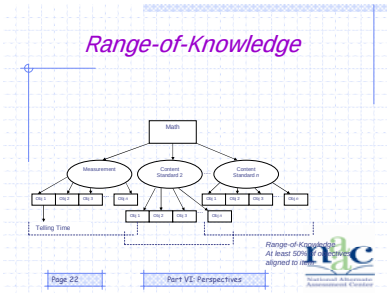
Categorical Concurrence



Categorical concurrence is the consistency of categories of content in the standards and assessments. The criterion of categorical concurrence between standards and assessment is met if the same or consistent categories of content appear in both the assessment and the standards. For example, if a content standard is *measurement* (2nd level down on the pyramid) in mathematics (1st level of the pyramid) does the assessment have items that target *measurement*? It is possible for an assessment item to align to more than one content standard. For example, if an assessment item requires students to calculate surface area, which is aligned to the content standard of *measurement*, to successfully answer the question the student needs to be able to multiply numbers, which is aligned to the content standard of *operations*. In this case the item is aligned to both content standards.

To produce an acceptable level of reliability for assessment scores, Webb recommends at least six items per content standard. In other words, there should be at least six assessment items related to the topic of measurement. Most states have multiple content standards or topics that are defined in their academic standards. If a state included five content standards under mathematics for 3rd graders (e.g., measurement, operations, etc.), there should be at least six items that align to each content standard. The more content standards expected by educational agencies, the more assessment items will be needed to align to those standards.

Range of Knowledge

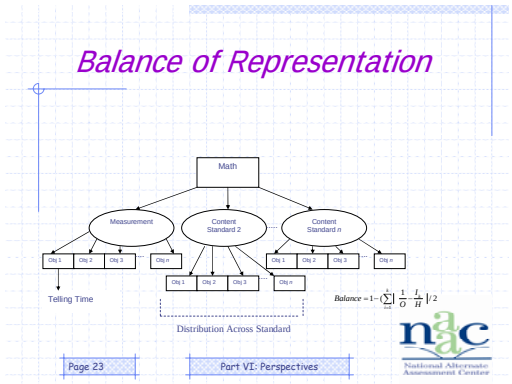


While categorical concurrence is the most obvious alignment criteria, additional alignment dimensions are needed to fully capture the complex knowledge and skills that are often emphasized in academic standards. For example, all the assessment items could

be aligned to only a few of the many academic content standards. Examining the range of standards an assessment covers and the balance of assessment items across the standards provides additional evidence about how well the assessment is capturing the breadth of the standards.

Range-of-knowledge correspondence criterion examines the alignment of assessment items to the multiple objectives (3rd level of the pyramid) within the content standards. Range-of-knowledge correspondence is used to judge whether a comparable span of knowledge expected of students by a standard is the same as, or corresponds to, the span of knowledge that students need in order to correctly answer assessment items. The range-of-knowledge numeric value is the percentage of content standards (2nd level of the pyramid) with at least 50% of the objectives (3rd level of the pyramid) having one or more hits. For example, if there are five objectives (e.g., length, area, volume, telling time, and mass) included in the content standard of measurement, a minimum expectation is at least one assessment item is related to at least three of the objectives.

Balance of Representation

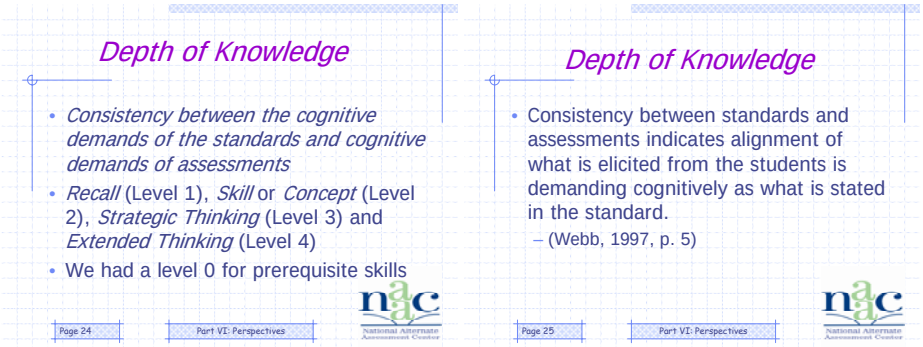


The *balance of representation* criterion is used to indicate the extent to which items are evenly distributed across the content standards and the objectives under the content standards. In our measurement content standard with five objectives, we would expect items would be evenly distributed across the five objectives. In practice educational agencies may place greater emphasis on specific objectives and content standards. In this case the assumption of an even distribution would be replaced with the expected proportion, or emphasis, as specified by the educational agency. The formula used to compute the balance of representation index is the following

$$Balance = 1 - (\sum_{i=1}^{k} \left| \frac{1}{O} - \frac{I_k}{H} \right|)/2,$$

where O is the total number of objectives hit (i.e., item has been judged to be aligned) for the content standard, I_k is the number of items hit corresponding to objective k, and H is the total number of items hit for the content standard. The balance index can range from 0 (indicating unbalanced representation) to 1.0 (indicating balance representation) with values from .6 to .7 considered a weak acceptable balance and values .7 or greater considered acceptable.

Depth of Knowledge



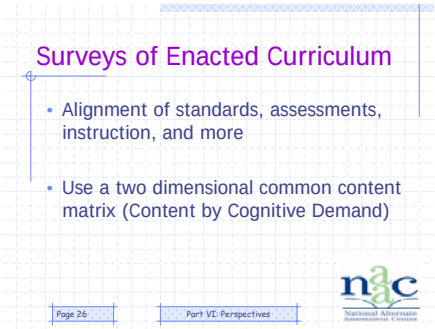
Depth-of-knowledge (DOK*)* examines the consistency between the cognitive demands of the standards and cognitive demands of assessments. Important aspects of learning go beyond academic topics and include students' organization of knowledge, problem representations, use of strategies, and self-monitoring skills (Glaser, Linn, & Bohrnstedt, 1997). Completely aligned standards and assessments requires an assessment system designed to measure in some way the full range of cognitive complexity within each specified content standard. Webb identified four levels for assessing the DOK of content standards and assessment items. DOK levels are *Recall* (Level 1), *Skill* or *Concept* (Level 2), *Strategic Thinking* (Level 3) and *Extended Thinking* (Level 4). Of course to accurately evaluate the DOK level, each level needs to be behaviorally defined and examples given of types of student behaviors. A more descriptive example of DOK can be found in Table 1. This example was taken from an alignment study we conducted for assessments given to students with significant cognitive disabilities.

To examine the DOK, all item on the assessment and all academic content standards are rated for DOK. We expect assessments to have items that are below the expected DOK, but there should be items at or above the expected DOK. According to Webb, an acceptable level for the DOK is 50% or more of the assessment items are at or above the content standard DOK level. A weakly met criterion for DOK level would be between 40% and 50%.

Table 1
Mathematics Description of Depth-of-Knowledge Levels

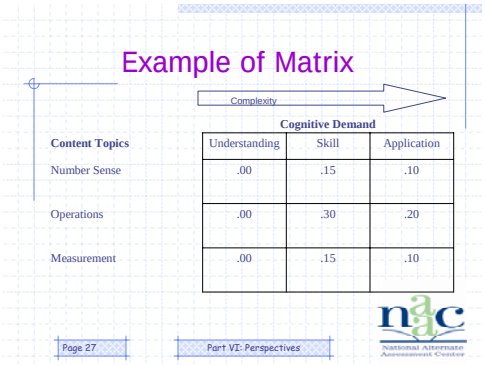
Level 1	Level 2	Level 3	Level 4
Requires students to recall or observe facts, definitions, terms. Involves simple one-step procedures. Involves computing simple algorithms (e.g., sum, quotient).	Requires students to make decisions on how to approach a problem. Requires students to compare, classify, organize, estimate or order data. Typically involves two-step procedures. Level 2 items include word problems with simple one-step solutions, graphing and regrouping.	Requires reasoning, planning, or use of evidence to solve problem or algorithm. May involve activity with more than one possible answer. Requires conjecture or restructuring of problems. Involves drawing conclusions from observations, citing evidence and developing logical arguments for concepts. Uses concepts to solve non-routine problems. Level 3 items include open-ended word problems where the operation is not given.	Requires complex reasoning, planning, developing and thinking. Typically requires extended time to complete problem, but time spent not on repetitive tasks. Requires students to make several connections and apply one approach among many to solve the problem. Involves complex restructuring of data, establishing and evaluating criteria to solve problems. Level 4 items are project-based, involve explanation & justification.

Surveys of Enacted Curriculum



The second alignment method we will discuss is the Surveys of Enacted Curriculum (SEC). The SEC alignment approach analyzes standards, assessments, and instruction using a common content matrix, which consists of two dimensions for categorizing subject content, which include content topics and cognitive demands (Porter & Smithson, 2001). Using this approach, content matrixes for standards, assessments, and instruction are created and the relationships between these matrices are examined. In addition to

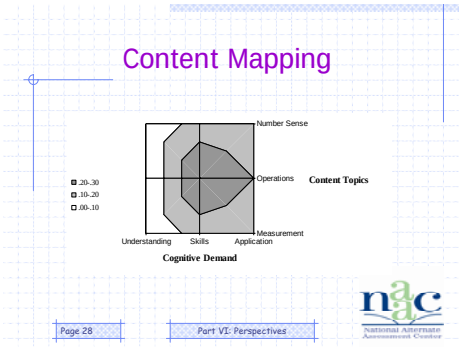
alignment statistics that can be calculated from the two-dimensional matrix, content maps and graphs can be produced to visually illustrate differences and similarities between standards, assessments, and instruction.



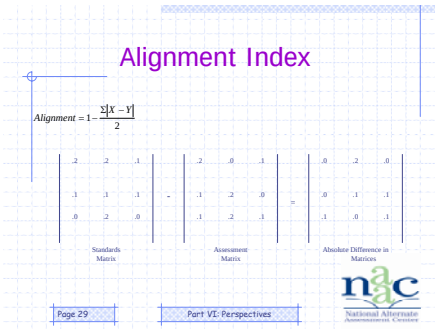
Content Topics	Understanding	Skill	Application
Number Sense	.00	.15	.10
Operations	.00	.30	.20
Measurement	.00	.15	.10

For illustrative purposes we will present all data using only three content areas and three categories for cognitive demand, producing a three by three matrix. In practice there are usually five or more content areas and six or more categories for cognitive demand.

To analyze assessments and standards, a panel of content experts conducts a content analysis and codes the assessment and/or standards by topic and cognitive demand. Results from the panel are then placed in a topic by cognitive demand matrix, with values in the cells representing the proportion of the overall content description. Each cell is the proportion of assessment items coded in each content topic by the cognitive demand. The cell with .30 indicates that 30% of the items were coded into the content topic area of *operations* and cognitive demand category of *skill*. The remaining cells indicate the proportion of assessment items that align to specific content topic and level of cognitive demand. The same procedure would be used to code academic content standards.



Porter (2002) reported that practitioners prefer visual representations of the matrix. The information in the matrix could be visually represented using content maps or surface area. The darker shades represent higher proportion or percentages of items. Most of the assessment items are in the content topic area of *operations* and at the cognitive demand categories of *skills* and *application*. The figure on the slide was produced using a simple spreadsheet program, but Porter and Smithson use software that produce much more sophisticated and detailed content maps.



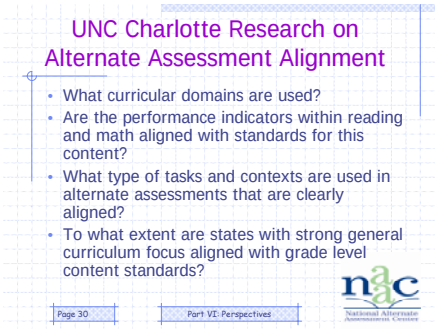
Indices of alignment are created by a cell by cell comparison between matrices. The formula for calculated the alignment index is

$$Alignment = 1 - \frac{\Sigma|X - Y|}{2},$$

where **X** is the matrix of assessment cell proportion and **Y** is matrix of standards cell proportions. Table 3 demonstrates the calculation of the alignment index. In this example the alignment between standards and an assessment is being calculated. After subtracting the corresponding cells of the standards and assessment matrix and taking the absolute value, the elements in the new matrix are summed across all the cells. In this example, the sum of the elements in the absolute difference between the two matrices is .6. This value is divided by 2 and then subtracted from 1, which results in an alignment index of .7.

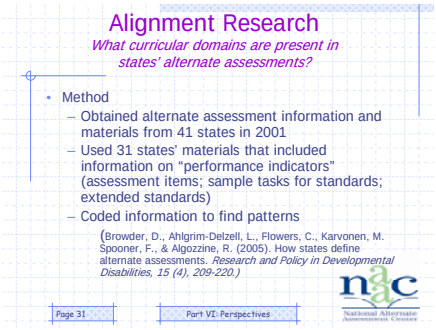
Alignment = 1-((.0+.2+.0+.0+.1+.1+.1+.0+.1)/2)=.7

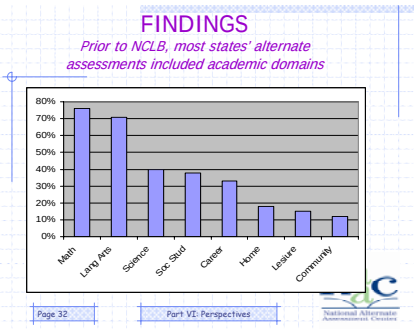
Research Review



At the University of North Carolina at Charlotte, we have been conducting research on alternate assessment and general curriculum access for the last five years. In this segment, we will briefly review our research findings on alignment and the evidence for teaching academic content to students with significant cognitive disabilities from our current review of the literature.

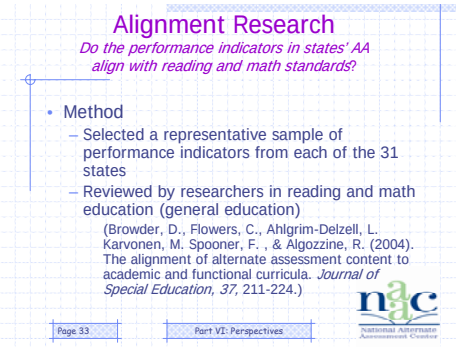
Alignment Research: What curricular domains are present in states' alternate assessments?

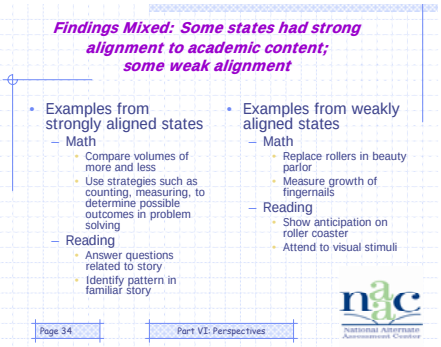




We first asked, What curricular domains are present in states' alternate assessments? When we began our work, there was some confusion about whether to align alternate assessments with the general curriculum or a separate functional curriculum. Our method was to collect information on alternate assessments from as many states as possible. We obtained information from 42 states; 31 of these had enough information in their materials to be coded for patterns. Our first finding was that even prior to No Child Left Behind, most states included academic content domains. Please note that while this study is in press for 2005, it was submitted in 2002 and is now a bit dated.

Alignment Research: Do the performance indicators in states' alternate assessments align with reading and mathematics standards?

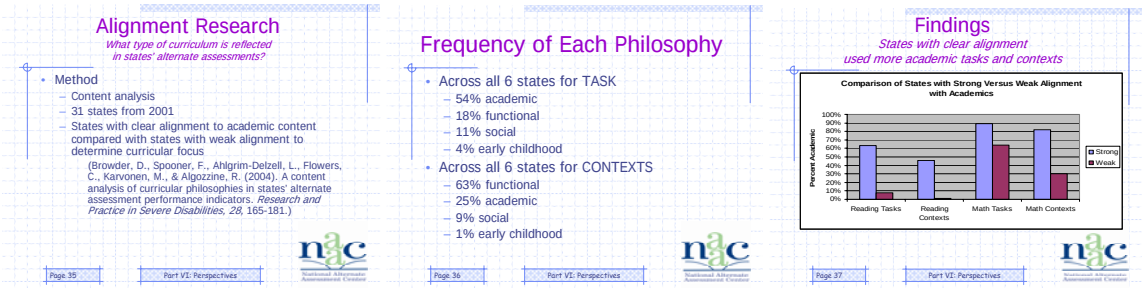




Next, we asked, do the performance indicators in states' alternate assessment align with reading and math standards? We used the term "performance indicators" to refer to the many variations states used to describe what the alternate assessments targeted. Some

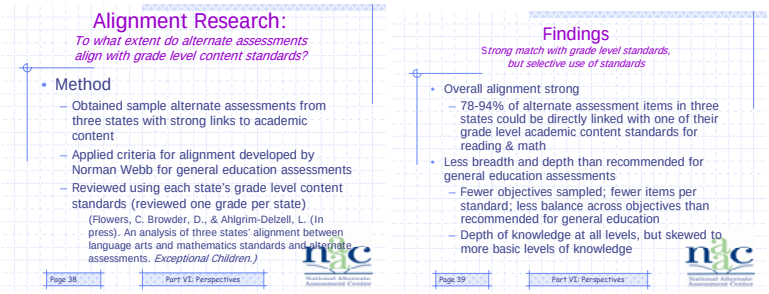
states provided sample assessment items; others sampled teaching tasks or curricular frameworks for their standards; others used the term “extended standards” for specific performance tasks like using a daily schedule. We wanted to learn if the performance indicators used in alternate assessments were really reading and math. I called this our “Emporer’s New Clothes” study based on the children’s fable in which the king’s court pretends to see clothes that are not visible. We wanted to be sure the items were really reading and math; that they were visibly related to academic content when viewed by math and reading researchers from general education. Our findings, the new Emporer does indeed have clothes- sometimes. These content experts found that some states’ performance indicators had clear alignment with reading and math, some states reflected weak links, and others had both strong and weak links. We listed some of examples from the states’ performance indicators in the slide above to illustrate the difference.

Alignment Research: What type of curriculum is reflected in states’ alternate assessments?



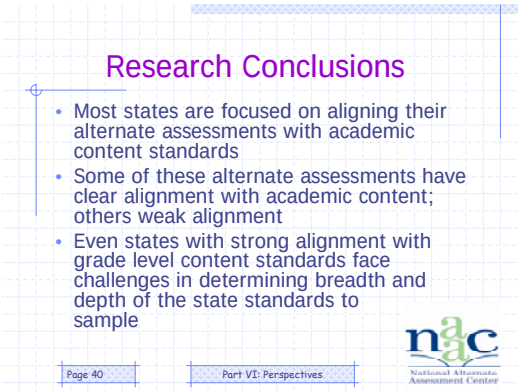
We decided to contrast the states with strong and weak alignment to ask, What type of curriculum is reflected in states’ alternate assessments? To answer this question, we coded each of the indicators for the type of curricular focus reflected in both its task and context. Our findings revealed a significant difference between states the curriculum experts had identified as having strong and weak links. While many indicators from both types of states included a blend of functional and academic tasks and contexts, the states with clearly aligned indicators used many more academic ones

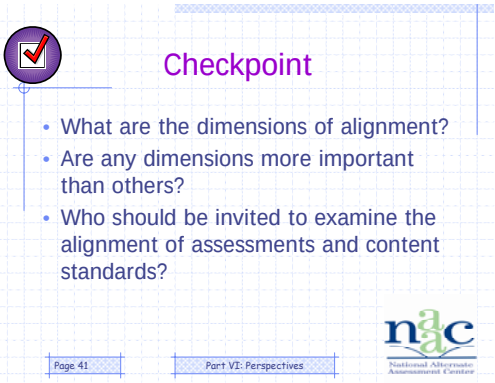
Alignment Research: To what extent do alternate assessments align with grade level content standards?



This led to evaluating states with clear alignment to academic content in more depth. We wanted to know to what extent do alternate assessments align with grade level content

standards? We asked researchers in alternate assessment to nominate states who had alternate assessments with strong alignment to general curriculum. Three states were identified and all agreed to supply copies of their alternate assessments and their states' academic content standards for this research. Two of these states used portfolio models and one used a performance assessment. We applied Norman Webb's criteria for alignment which looks at categorical concurrence, depth-of-knowledge consistency, range of knowledge correspondence, and balance of representation for each state using the state's grade level academic content standards. Our findings confirmed that these were states with overall strong alignment. Most of the assessment items could be directly linked to grade level academic content standards. In contrast, there was some narrowing of the breadth and depth of standards addressed in the alternate assessments. Fewer objectives were sampled; there were fewer items per standards; and less balance across objectives. The states' standards each had a normal distribution for depth of knowledge-that is most standards were geared to the middle level and fewer sampled more basic or complex levels. In contrast, the alternate assessments were negatively skewed for depth of knowledge with more items at the basic level. In a follow up conversation with the states, all emphasized the importance of sampling the entire range of depth of knowledge which all three states had done. For example, we found items that required more complex demonstrations of knowledge like synthesis and evaluation. They also emphasized the importance of stretching towards broader and deeper alignment with their state standards.





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Measurement Perspectives for "Alignment"

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Ref. Type: Journal article

Notes: Journal article

Title: A content analysis of the curricular philosophies reflected in states' alternate assessment performance indicators.

Authors: Browder, D., Spooner, F., Ahlgrim-Delzell, L., Flowers, C., Algozzine, & Karvonen, M.

Pub. Date: 2004

Source: Research & Practice with Severe Disabilities

Vol, Issue: 28, 4

Publisher:

Page #: 165-181

Keywords: alternate assessment, performance indicators

Abstract:

Participants: Six selected states from a previous study that were identified as having strong, weak, or mixed links to reading and math were included in the study.

Test Design: The purpose of the study was to examine five curricular philosophies (*developmental, functional, social inclusion, self-determination, and academic*) that states use in their alternate assessment guidelines for students with severe disabilities, and to evaluate how these philosophies were reflected in the performance indicators of states selected from an earlier study on alignment. The content analysis used both qualitative and quantitative procedures. Using qualitative methods in an earlier study, states were identified as having strong, weak, or mixed links to reading and math. These states' performance indicators were classified by current philosophy and analyzed using non-parametric statistical procedures in the current study.

Findings: Results revealed that clear link states used predominantly academic tasks in their performance indicators for math and reading. Overall clear link states used more academic contexts than the weak link or the mixed link states.

Ref. Type: Journal

Notes: Journal article

Title: The alignment of alternate assessment content to academic and functional curricula

Authors: Browder, D., Flowers, C., Ahlgrim-Delzell, L., Karvonen, M., Spooner, F., & Algozzine, R.

Pub. Date: 2004

Source: The Journal of Special Education

Vol, Issue: 37, 4

Publisher:

Page #: 211-223

Keywords: alternate assessment, academic curricula

Abstract:

Participants: 31 states participated in the study.

Test Design: This study investigated the curricular focus of alternate assessments using performance indicators in math, language arts, and functional skills from 31 states. Professionals in math education, language arts and severe disabilities together with a group of stakeholders evaluated the performance indicators relative to their alignment to national standards and curricula. States that had alternate assessment performance indicators that were clearly aligned to math or language arts and those that did not were identified. The functionality of the indicators was also considered. Features of the performance indicators that exemplified alignment with general or functional curricula were identified through a series of discussions.

Findings: Results indicate that while some states have created lists of indicators that are accurate representatives of math and language arts, other states even within the most experienced states have missed the mark. Overall, the findings indicate that alternate assessments have a strong focus on academic skills, but they also reflect additive curricula approach which links academic and functional skills.

Ref. Type: Journal

Notes: Journal article

Title: How states define alternate assessments.

Authors: Browder, D., Ahlgrim-Delzell, L., Flowers, C., Karvonen, M., Spooner, F., & Algozzine, R.

Pub. Date: 2005

Source: Research and Policy in Developmental Disabilities,

Vol, Issue: 15, 4

Publisher:

Page #: 209-220

Keywords: alternate assessment, developmental disabilities

Abstract:

Participants: 42 states participated in this study.

Test Design: After IDEA 1997 mandated inclusion of students with disabilities in schools accountability systems, states began to develop alternate assessments to focus on students' performance on state standards. The purpose of this study was to examine how alternate assessments linked to state standards and how the assessments were scored. Researchers obtained and reviewed alternate assessment materials from 42 states. The information collection period ranged from June 2001 to November 2001. This information that consisted mainly of manuals and guidelines was examined to identify the skills and knowledge being measured by alternate assessments.

Findings: Findings from this study indicated that states employed a wide variety of implementation and scoring methods. Generally in most states, assessments were either linked back to state standards or standards were extended to alternate assessments. Most states measured academic domains; however, some states measured only functional skills. Regarding scoring, most states used some form of rubric to score the alternate assessments mainly measuring mastery, progress, or level of independence.

Ref. Type: Report

Notes: Technical Report

Title: Defining, Developing and using Curriculum Indicators
Authors: Porter, A. C., & Smithson, J. L.

Pub. Date: 2001

Source: CPRE Reports Series PR-048

Vol, Issue:

Publisher:

Page #:

Keywords: curriculum indicators, defining, developing
Abstract:

Participants:

Test Design:

Findings: The purpose of this report was to describe the progress made to develop valid and efficient measures of instructional content and its relationships to assessments and standards. The authors paid particular attention to mathematics and science. First they discussed the Reform Up Close Study, a Consortium for Policy Research in Education (CPRE) project. Then they highlighted the pertinent issues involved in defining and measuring curriculum indicators while taking note of how the approach has developed over the past ten years. In addition, they also provided information on using curriculum indicators in school improvement, program evaluation, and informing policy decisions. More focus was given to new methods for determining alignment among instruction, assessment, and standards. Suggestions for the next steps are also provided.

Ref. Type: Report

Notes: Monograph

Title: Criteria for alignment of Expectations and Assessments in Mathematics and Science Education. Research monograph no 6

Authors: Webb, N. L.

Pub. Date: 1997

Source: Research Monograph no. 6

Vol, Issue:

Publisher: Washington, DC: Council of Chief State School Officers

Page #:

Keywords: Expectation, criteria, educational assessment, academic achievement, educational change, standards,

Abstract:

Participants:

Test Design:

Findings: The monograph presents criteria for judging the alignments between expectations of student achievement and assessment. Specifically, 12 criteria for judging alignment are discussed and grouped into five categories namely: 1) content focus; 2) articulation across grades and ages; 3) equity and fairness; 4) pedagogical implications; and 5) System applicability. Along with the criteria, examples and levels of agreement are also provided. An expert panel formed as a cooperative effort of the Council of Chief State School Officers and National Institute for Science Education developed the above criteria.

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