



Access to the General Education Curriculum for Students with Significant Cognitive Disabilities

Over the last few decades the curricular philosophy towards educating students with significant cognitive disabilities has evolved considerably. Browder et al (2004) have described the various curricular trends as: the Developmental Model, the Functional Curriculum philosophy, the Social Inclusion Movement, the Self-Determination Model, and General Curriculum Access.

In the 1970s the Developmental Model emerged and was based upon the philosophy that students with significant cognitive disabilities ages 6-21 should be educated with adaptations to infant and preschool curriculum (Browder et al, 2004). In essence, the student's "mental age" was used to plan the educational program, regardless of his or her chronological age. As a response to the Development Model, the Functional Curriculum philosophy emerged, promoting functional, age-appropriate skills to help develop independent living capabilities and access to the community (Browder et al, 2004). The major life domains (vocational, home, community, and leisure) served as the foundation of the functional curriculum.

During the mid 1980s and 1990s, the Social Inclusion Movement emerged. This movement emphasized the importance of students with significant cognitive disabilities becoming full members of their school by developing opportunities to form friendships with non-disabled peers (Browder et al, 2004). This movement tended to focus on those social skills, such as communication and turn-taking, that provided opportunities for interactions with non-disabled peers, rather than learning academic skills. The Self-Determination Model emerged during the 1990s and centered on the principle that students with significant cognitive disabilities have the right to make choices about their daily lives. This model advocated for classroom instruction in choice making and goal setting (Browder et al, 2004).

During the late 1990s, the emphasis on General Curriculum Access emerged based on the principle that all students, including those with significant cognitive disabilities, should have the opportunity to learn the general curriculum in the areas of reading, math, science, and social studies (Browder et al, 2004). This philosophy stresses the use of different academic performance levels and the importance of linking functional curriculum to academic skills, regardless of placement. Therefore, all students with significant cognitive disabilities must be taught grade level academic content that is based upon alternate achievement standards and must be assessed on their progress via state alternate assessments. Alternate achievement standards set substantially different expectations for student mastery of grade-level content because the content is more restricted in scope or complexity and may take the form of introductory or pre-requisite skills (United States Department of Education, 2005). However, the content must be clearly related to grade-level content (United States Department of Education, 2005).

The mandates of IDEA 97 and IDEA 04 have been a major impetus of General Curriculum Access, since these laws require that every child with a disability has:

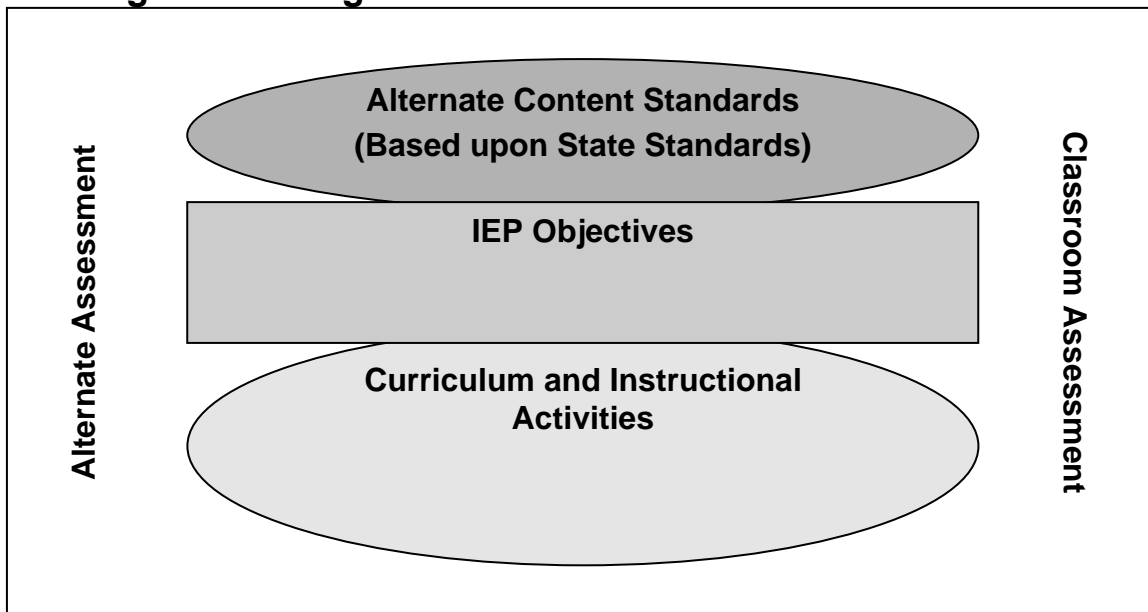
- A statement describing how the child's disability affects the child's involvement with and progress in the general curriculum
- A statement of measurable goals to enable the child to be involved with and progress in the general curriculum; and
- A statement of the services, program modifications, and supports necessary for the child to be involved in and progress in the general curriculum.

In addition, the No Child Left Behind Act of 2001 (NCLB) is designed to ensure that schools are held accountable for educational results so that each and every student can achieve to high standards (United States Department of Education, 2005). This legislation has emphasized a more academic curriculum for students with significant cognitive disabilities; however, the important lessons which have been learned from each of the previous curriculum trends should still guide our thinking in relation to access to the general curriculum. These important lessons include (National Alternate Assessment Center, 2005):

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- 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; 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.

Therefore, teachers should retain the important lessons and characteristics from the previous curriculum trends and integrate these useful components within General Curriculum Access so that there are higher academic skill expectations for students with significant cognitive disabilities. This next section of the brief will explore the linkage between alternate state standards, alternate assessment, the IEP, and classroom instruction and assessment as the process of providing access to the general education for students with significant cognitive disabilities. **Figure 1** illustrates the relationship among alternate content standards, curriculum and instructional activities, IEP objectives, and classroom and alternate assessment.

FIGURE 1 Access to General Education Curriculum for Students with Significant Cognitive Disabilities



As Figure 1 depicts, Access to the General Education Curriculum for students with significant cognitive disabilities begins with the State Alternate Content Standards. Some states have extended the regular standards to the essence of each grade level standard in math and reading and include descriptors for each level. These alternate content standards should be used to develop challenging IEP objectives and curriculum and instructional activities for students with significant cognitive disabilities. Classroom assessment and the statewide alternate assessment use work samples and teacher ratings to determine the proficiency level of each student to measure how well the student has learned each standard. Therefore, the IEP and curriculum instructional activities for students with significant cognitive disabilities should be aligned with the alternate content standards, since this is what the alternate assessment measures.

Let's begin by examining the link between alternate content standards, the IEP, and curriculum and instructional activities in more detail using a 6th grade math standard from one state (**Students are able to use concrete materials, graphs, and algebraic statements to represent problem situations**) to see how to provide access for students with significant cognitive disabilities. This state extended this standard for students with severe disabilities to **Students will use concrete materials and graphs to represent**

problem situations. Some of the descriptors for this alternate content standard include:

- Students are able to select the correct illustration or set of concrete materials
- Students are able to count the items used to make a ratio
- Students are able to use concrete materials or select a graph that represents the problem situation
- Students are able to write simple algebraic expressions involving addition or multiplication using whole numbers, and
- Students are able to solve simple algebraic expressions involving addition or multiplication using whole numbers.

The content of the IEP for students with significant cognitive disabilities should be based upon access to the general education curriculum and not based exclusively on a functional curriculum (United States Department of Education, 2005). In other words, students with significant cognitive disabilities can reach higher levels of achievement by linking their learning, which is documented in the IEP, to the standards our society expects of all students (Thompson, Quenemoen, Thurlow, Ysseldyke, 1991). Given the importance the IEP has in determining what students with significant cognitive disabilities should learn, it is essential that the IEP process merges with the development of standards-based curricula and assessment (Kleinert & Farmer-Kearns, 2001).

To merge the IEP process with the development of standards-based curriculum, a curriculum decision-making model which promotes access to and progress in the general curriculum, will be utilized. The model that will be described was developed by Wehmeyer, Lattin, & Agran (2001). This curriculum decision-making model begins with the general curriculum, taking into account individual student needs, and emphasizes three levels of curricular modifications:

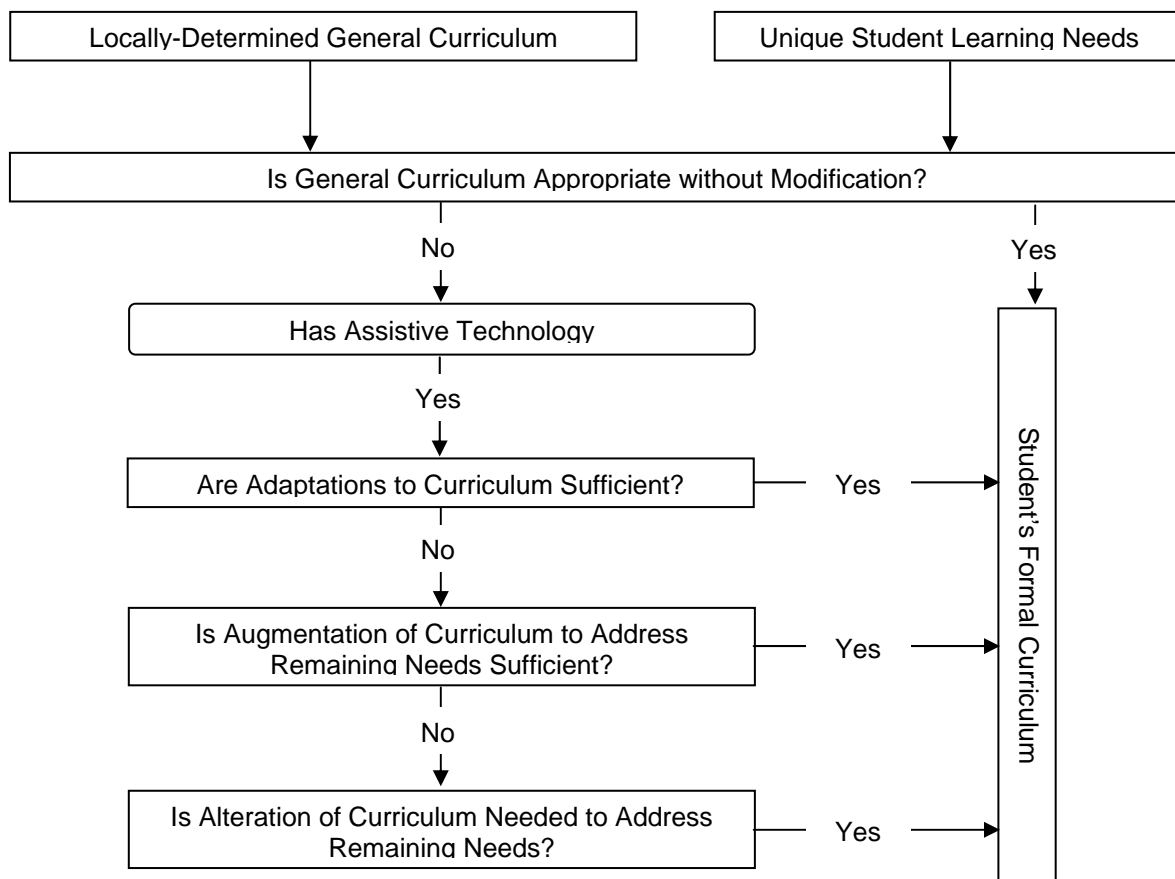
- **Curriculum adaptation:** modification to the presentation and representation of and the ways in which students engage in and with the curriculum (e.g. changing font size in a text, changing large amounts of text to an outline or pictures, using concrete objectives to represent numbers)
- **Curriculum augmentation:** enhancing or expanding the curriculum to teach students strategies or methods to impact

and improve their capacity to succeed within the curriculum (e.g. adding lessons teaching students to self-instruct)

- **Curriculum alteration:** changing the general curriculum in some way so as to address unique or more functional knowledge and skill content areas. (Wehmeyer, Lattin, & Agran, 2001)

The model assumes that students will vary according to the degree to which curriculum modifications are necessary. However, for students with severe disabilities, augmenting the general curriculum by adding content to enable learners to succeed within the curriculum, is a necessary bridge between adaptations and altered curricula (Wehmeyer, Lattin, & Agran, 2001). When making decisions about adaptations, augmentation, and alteration, both the content and curricular demands, as well as the needs and strengths of the student, must be considered. Figure 2 depicts the decision-making process.

FIGURE 2 Model to Gain Access to the General Curriculum



(Wehmeyer, Lattin, & Agran, 2001)

The process begins by asking the question: **“Is the general curriculum, which includes the State Alternate Content Standards, adequate to meet the student’s instructional needs?”** For most students with significant cognitive disabilities, the response will most likely be either “no” or a qualified “yes,” with some components of the general education curriculum adequate while others are inadequate to meet the student’s unique needs. If there are any aspects of the general curriculum identified as appropriate without modifications, these should be identified as a portion of the student’s curriculum, and reflected within the IEP’s content.

The next decision to consider is **whether the use of assistive technology may help to make the curriculum and alternate content standards more appropriate.** Those aspects of the general education curriculum that become appropriate through the use of assistive technology then become part of the student’s formal curriculum. Then, consider how the general curriculum can be adapted. Curriculum adaptations are changes in how the material is represented (e.g. pictures instead of large text, summaries of the main ideas), presented (e.g. audiotape for nonreaders, web-based information that can be read through text-reader programs), or how a student is engaged with the curriculum (e.g. expresses ideas through artwork instead of written format). Some form of curriculum adaptations will enable most learners to gain access components of the general education curriculum that may not have been accessible to them before. These components become part of the student’s curriculum, and the IEP should contain content to reflect this.

The next step is to **consider the degree to which the curriculum can be augmented to provide access.** The augmentation process does not change the curriculum, but rather adds to or expands the curriculum to teach or provide students with strategies to succeed in the curriculum. Some examples of how the curriculum can be augmented for students with significant cognitive disabilities include: self-regulation strategies, self-management strategies, and self-determination. **Self-regulation strategies** enable individuals to examine their environments and their repertoires of responses for coping with those environments to make decisions about how to act. These strategies also help students evaluate the desirability of outcomes of their actions, and revise their plans as necessary (Wehmeyer, Lattin, & Agran, 2001).

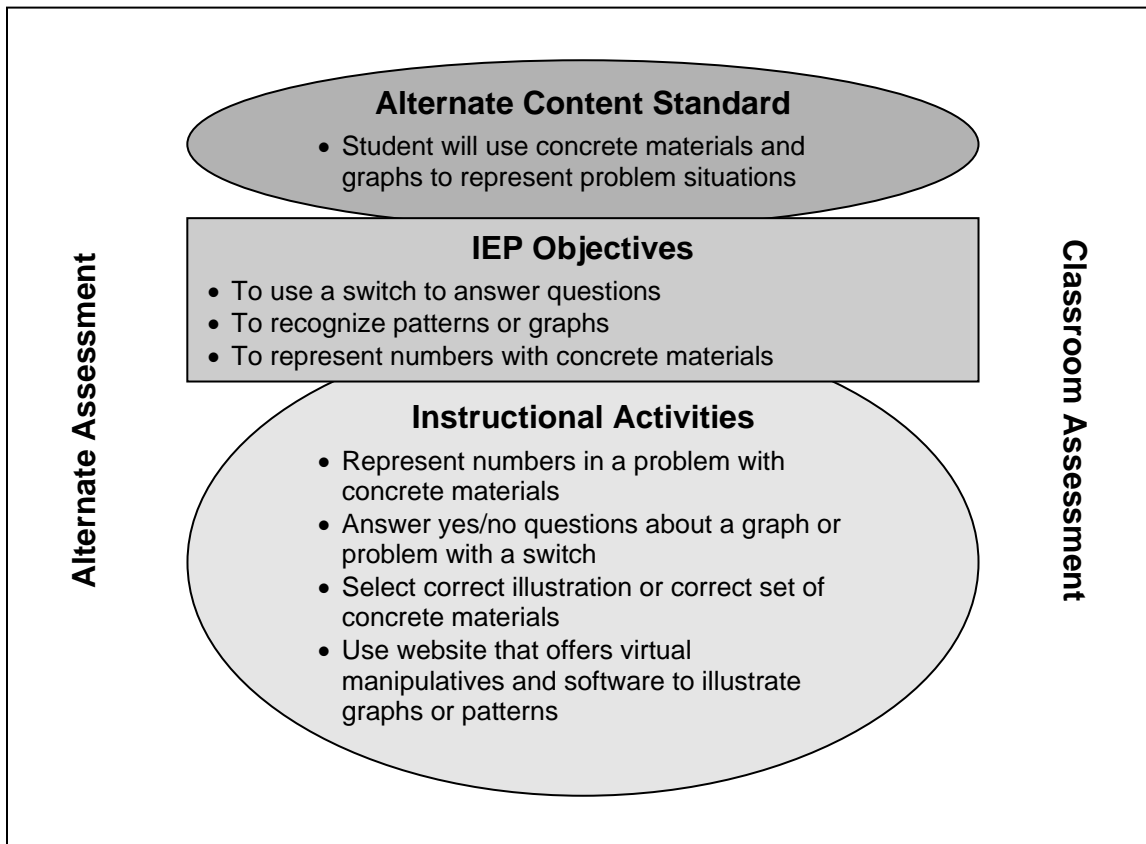
Self-management strategies are designed to teach students with significant disabilities how to manage their own behavior. **Self-determination** focuses upon student control or direction over the learning process. A focus upon self-determination will include efforts to enhance goal-setting, problem-solving and decision-making skills, as well as self-awareness, self-advocacy, and leadership skills. Content within the IEP should reflect any augmentation in the curriculum.

The final step in this decision-making process is to consider if the student's educational program is complete with the previous steps, or **whether there is need to add content to the student's curriculum that is not found in the general curriculum.** This step provides the means to address the unique needs of the student, which may be more functional, and these should also be documented within the IEP.

Once an IEP has been developed based on the alternate content standards and access to the general education curriculum, the teacher can use the IEP objectives to develop challenging curriculum and instructional activities. In the example presented in Figure 3, the following IEP objectives are relevant to the alternate content standard **(Students will use concrete materials and graphs to represent problem situations):**

- To use a switch to answer questions
- To recognize patterns or graphs
- To represent numbers with concrete materials.

FIGURE 3 Access to General Curriculum for Students with Significant Cognitive Disabilities, Algebra Grade 6



To develop the curriculum and instructional activities, the teacher identifies the concepts, skills, and specific knowledge all students are meant to acquire within an instructional unit that relate to each standard. Then, a prioritized subset for students with significant cognitive disabilities can be selected. During the instructional planning process, the teacher considers the typical supports identified on the student's IEP (e.g. assistive technology) and the IEP objectives. The key to accessing general curriculum standards for students with disabilities is designing instructional activities that require students to demonstrate authentic or real-life performances (Kleinert & Kearns, 2001).

Students with significant cognitive disabilities can gain access to general curriculum standards in four ways (Kleinert & Kearns, 2001). First, some students with significant cognitive disabilities may demonstrate a particular standard exactly as written. Second, students

with significant cognitive disabilities may gain access to the standards through an alternate form (e.g. same level of cognition but a different response format). Third, some students with significant disabilities may demonstrate a particular standard by completing the critical function of the standard but at a lower complexity level. Fourth, some students with significant disabilities may gain access to the standard through access skills. This means that students work on very basic skills that are embedded in standards-based activities. A resource which highlights many examples of activities that articulate standards and critical or access skills is called TASKS: Teaching All Students in Kentucky Schools (1998), developed by Dyer & Kearns. It can be accessed at <http://www.ihdi.uky.edu/ksc%2Dtasks/>.

In the example presented in Figure 3, a teacher may have students do any of the following activities to represent problem situations:

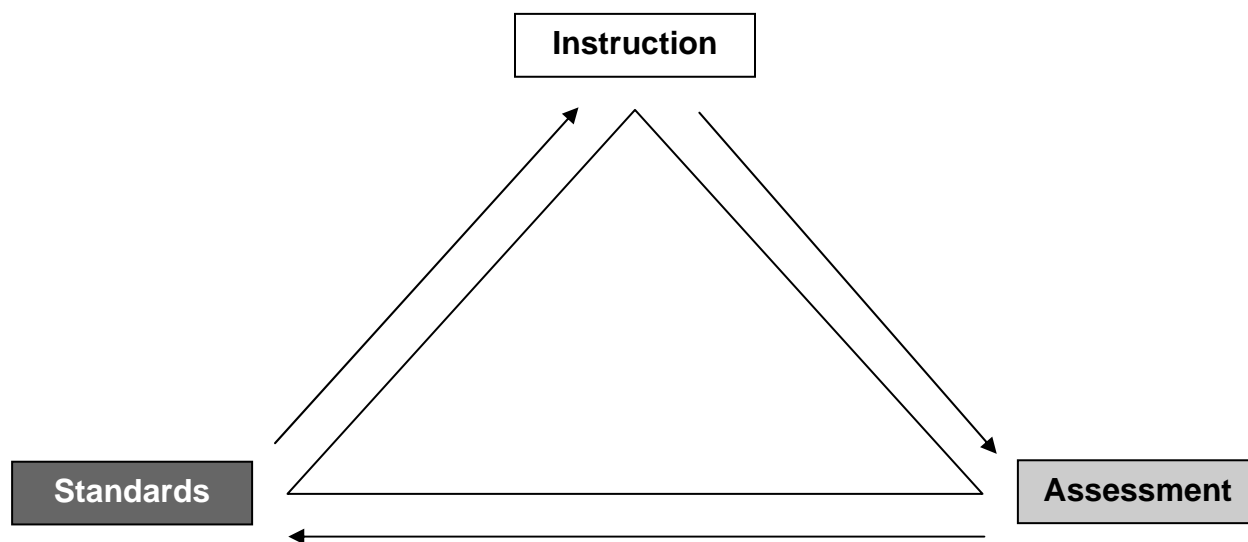
- Represent numbers in a problem with concrete materials
- Answer yes/no questions about a graph or problem with a switch
- Select correct illustration or correct set of concrete materials
- Use website that offers virtual manipulatives (See appendix) and software that supports virtual manipulatives (e.g. IntelliMathics, IntelliTools) to manipulate the tools and/or illustrate graphs or patterns.

To minimize the time this planning process takes, teachers may find it helpful to create a menu of support ideas to be utilized across instructional activities. For example, when a class is completing a worksheet, the student with a significant cognitive disability could match picture symbols to vocabulary words. For a list of other ideas to develop a menu of support ideas, see Denham, 2004, which can be downloaded from <http://www.ihdi.uky.edu/IEI/>.

There is evidence that students with significant cognitive disabilities can learn academics (Browder & Flowers, 2004). Teachers who have incorporated learning standards into their instruction cite unanticipated gains in students' performance and understanding levels. Furthermore, some individualized social, communication, motor, and self-help skills can be practiced during activities based on the learning standards (Massachusetts Department of Education, 2005).

The final component of access to the general education curriculum for students with severe disabilities is assessment. As Figure 3 illustrates, classroom assessment and statewide alternate assessment measure the state alternate content standards, IEP, and curriculum and instructional activities. What is taught should align with what is assessed. Instruction represents the process by which students learn the standards, while assessment (alternate and classroom) is the process for measuring how well the student has learned what has been taught (e.g. alternate content standards). Thus, this forms an integrated system of standards and assessment, as shown in Figure 4.

FIGURE 4



Classroom assessment (e.g. instructional data, work samples, and video tapes) provides rich data sources from which to document skill acquisition and access to the general curriculum for students with significant cognitive disabilities. Organizing this data in a portfolio allows the student, his or her family, and the teacher to see tangible evidence of progress and performance, which should be used to guide instructional decisions. Moreover, this data can also be used for the alternate assessment. It has been found that there is a significant positive correlation between alternate assessment scores and students' growth on their IEP skills (Browder, Karvonen, Davis, Fallin & Courtade-Little, 2005). This means that if teachers collect data that can be used for alternate assessment and instructional decision-making, the time

spent on the assessment has the potential to enhance the instructional effectiveness (Browder, Karvonen, Davis, Fallin & Courtade-Little, 2005). The data collected for alternate assessment can bring instructional focus and clarity to a student's program (Kleinert & Kearns, 2001). Thus, alternate assessment can become an instructional organizer for the student's overall program as well as a way of showcasing the student's important learning outcomes (Kleinert & Kearns, 2001).

In sum, this brief has defined access to the general education curriculum for students with significant cognitive disabilities through the alignment of alternate content standards, IEP objectives, curriculum and instructional activities, and classroom and alternate assessment. Educational programs for students with significant cognitive disabilities must be based on academic content and should not be solely based upon a functional curriculum. Thus, alternate content standards should be used when developing IEPs and instructional activities for students with significant cognitive disabilities.

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Appendix Websites of Virtual Manipulatives

National Library of Virtual Manipulatives for Interactive Mathematics

<http://matti.usu.edu/nlvm/nav/index.html>

The project is supported by the National Science Foundation and is aimed toward creating an online library of virtual manipulatives for mathematics instruction in grades K-12. The interactive, web based manipulatives are mostly in the form of Java applets. The virtual library is broken into clusters of grades: PreK-2, 3-5, 6-8, and 9-12. For each grade group, there are manipulatives for numbers and operations, algebra, geometry, measurement, and data analysis and probability. CDs are also available for purchase.

MathDL

<http://www.mathdl.org/jsp/index.jsp>

The MAA Mathematical Science Digital Library provides online resources for both students and teachers of mathematics. The site has Java applets, interactive modules, & Flash presentations for studying numerical & graphical solutions of differential equations, parametric representations of curves, conic formulae, Euler's analysis of the Genoese Lottery, Van Schooten's ruler constructions, Riemann sums, and how to use calculators.

Project Interactive

<http://www.shodor.org/master/interactivate/>

The goal of Project Interactive is to create, collect, evaluate, and disseminate interactive Java based courseware for exploration in mathematics. The site provides lessons, activities, and tools for teachers and students. The site is maintained by the Shodor Education Foundation, Inc.

NCTM: Illuminations

<http://illuminations.nctm.org/>

Illuminations is a partnership between the National Council of Teachers of Mathematics and MarcoPolo. The site provides lessons, standards, tools, and web resources. The tools section provides interactive applets for learning and teaching math. The tools are designed for students in grades PreK-12 and cover a variety of topics. The web resources table provides access to over 1100 reviewed internet math resources. The table is divided into different grade groups (PreK-2, 3-5, 6-8, and 9-12) and standards (number and operations, algebra, geometry, measurement, data analysis and probability, problem solving, reasoning and proof, communication, connections, and representation). There is also an online catalogue of products and publications for sale.

On-Line Mathematics Manipulatives

<http://oneweb.utc.edu/~deborah-mcallister/onlinemath.html>

Run by the University of Tennessee, this site provides an index of other website providing manipulatives as well as links to specific activities. Topics include pattern blocks, flash cards, and algebra tiles.

For additional information on this or other topics, please contact The Access Center at accesscenter@air.org.

The Access Center: Improving Outcomes for All Students K-8

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