

Achieving Access to the General Curriculum for Students with Mental Retardation: A Curriculum Decision-Making Model

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Abstract: The 1997 amendments to the Individuals with Disabilities Education Act require that individualized education programs of students with disabilities include information about students engagement in and access to the general curriculum. The US Department of Education clearly intended this as a means to heighten expectations for students with disabilities and to align special education with school reform efforts. There are, however, a number of questions about how these mandates apply to the education of students with mental retardation. This article overviews access requirements, examines the intent and meaning of the language, and proposes a decision-making model to enable IEP teams to reach curriculum decisions that provide such access for students with mental retardation.

The 1997 amendments to the Individuals with Disabilities Education Act (IDEA) contained statutory language requiring that each student's Individualized Education Program (IEP) include:

- 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;
- A statement of the services, program modifications, and supports necessary for the child to be involved in and progress in the general curriculum.

As a result of these stipulations, educators need to reconsider the process by which the educational programs of students with mental retardation are designed and implemented to ensure that access to the general curriculum is provided. The purpose of this article is to address issues relative to access to the general curriculum for students with mental retardation, and to propose one model for achieving such access.

Intent of the Access to the General Curriculum Language

In testimony on June 20, 1995 before the US House of Representatives Subcommittee on Early Childhood, Youth and Families (a subcommittee of the House Committee on Economic and Educational Opportunities), US Secretary of Education Richard Riley stated:

Our second principle is to improve results for students with disabilities through higher expectations and access to the general curriculum. We know that most children work harder and do better when more is expected of them -- whether it be in the classroom, doing their homework, or doing the dishes. Disabled students are no different. When we have high expectations for students with disabilities, most can achieve to challenging standards -- and all can achieve more than society has historically expected. However, not all schools presently have high expectations for these students, and not all schools take responsibility for the academic progress of disabled students (Testimony of Richard Riley, 1995).

Secretary Riley's comments show that the purpose of the 'access to the general curriculum' language is to ensure that students with disabilities are included in emerging standards-based reform and accountability systems as a means to raise expectations and ensure access to a challenging curriculum, an emphasis codified into law in the 1997 IDEA amendments.

What is the General Curriculum?

IDEA regulations define the term 'general curriculum' as referring to "the same curriculum as for nondisabled children" (Federal Register, 1999, p. 12592). Specifically, one must interpret the *general curriculum* as the formal curriculum adopted by state and local education agencies; a curriculum usually designed under the auspices of standards-based reform efforts across the country. The 1997 IDEA amendments emphasized measures of accountability and the establishment of high expectations by aligning the IEP process with state and local education improvement efforts and by including students in state and district-wide assessments.

There may be some confusion between efforts to promote the inclusion of students with mental retardation in general education classrooms and the 'access to the general curriculum' mandates. While recent reports to Congress on the implementation of the IDEA support the ongoing need to focus on *where* students with mental retardation receive their education, the access to the general curriculum mandate does not speak to the issue of *where* students are educated, per se, but instead focuses on *what* (i.e., what is the content of the student's educational program). Technically, a student could have access to the general curriculum in settings other than the general classroom. However, IDEA 1997 indicates a strong preference for including students with disabilities in typical education settings, and there are clear benefits in doing this for students with mental retardation to gain access to the curriculum.

Standards-based school reform. The US Department of Education has identified more than 280 Comprehensive School Reform (CSR) models. While it is inaccurate to classify each of these 280 models as a 'standards-based reform model,' it is not inaccurate to note that the preponderance of them adopt a standards-driven approach and that, at a state and national level, standards-based reform is the dominant school-reform model. The access to the general curriculum requirements in IDEA are, in fact, inextricably linked with standards-based reform.

A standard is an exemplar that serves as a measure of value, weight or some other 'measurement' for comparison with other examples of the same entity. The process of setting standards as a means of facilitating change in the educational system involves the establishment of content or performance outcomes that serve as exemplars of high quality outcomes of the educational process (Sykes & Plastrik, 1993). The establishment of such standards, the development and implementation of curricula to enable students to attain these standards, and the alignment of standards and curriculum with testing to determine student progress toward the standards form the essential components of standards-based reform.

The purpose of standards-based reform efforts is the establishment of content standards that "define the curriculum" and performance standards that "define what students should learn" (Sykes & Plastrik, 1993). Such standards are then combined, in a variety of ways, with the establishment of a vision and goals for schools; instructional efforts that include curriculum design to achieve these standards; teacher training, ongoing education, and licensure; oversight of instructional activities; and student or teacher assessment or evaluation procedures. Sykes and Plastrik noted several intents of systemic reform efforts that are important to take into account with regard to the education of students with mental retardation. First, the intent is to direct instructional activities to align with the multiple policy changes, from standards to evaluation. A second intent of such reform is to focus the curriculum to "delimit the work of teachers and students to a manageable core of widely shared learning outcomes" (p. 9). Third, systemic reform attempts to change 'how teachers teach' and thus what and how children learn. Fourth, systemic reform is intended to motivate students through the linkages between performance outcomes and a "wider array of stakes and postschool futures" (p. 10).

Standards-based reforms, high stakes testing and students with disabilities. The potential benefits for students with mental retardation within the standards-based reform efforts are those emphasized by Secretary Riley. That is, students would have access to a challenging curriculum, be held to high expectations, and be within the accountability system and, thus, not excluded or marginalized. On the problematic side, however, there are several potential or unintended consequences from the misapplication of standards-based reform or the overemphasis of certain components of standards-based reform to the exclusion of others. For example, when high stakes

testing is linked to content and performance standards, and students, teachers, and schools alike become ‘accountable’ to improve scores on such tests, the effect of such efforts may go beyond ‘focusing’ the curriculum to substantially narrowing it only to what is on the test. When standards and high stakes testing place emphasis only on core academic content areas, the efforts of teachers, building administrators and others will be targeted primarily toward those areas and potentially result in the exclusion of other content areas, such as preparation for the transition from school to community or other areas addressing the ‘functional’ or individualized needs of students with mental retardation.

Additionally, while the premise that higher stakes will motivate students to achieve to a higher level may be applicable for some students, high stakes may have the opposite effect on other students, limiting their motivation to stay in school. If the consequences of setting high standards and narrowing the curriculum to core content areas are that students who are already having difficulty experience continued or greater failure, are presented only with options like being retained in a grade, attending weekend or summer school programs, or not graduating due to a high stakes test results, it seems reasonable to hypothesize that a potential impact of the reform effort will be higher drop out rates. Sykes and Plastrik (1993) noted this as a problem for all students, not just specifically for students with disabilities, stating:

If such standards are attached to powerful stakes such as progress through and graduation from school, admission to higher education and access to employment opportunities and training, the consequences will lay bare and potentially exacerbate our society’s continuing, unresolved, and systemic inequities. Furthermore, much evidence indicates that the imposition of external, high stakes accountability produces negative effects on student motivation and on the character of teaching (p. 22).

In their analysis of the policy frameworks undergirding the implementation of standards-based reform in general and, specifically for students with disabilities, the *Committee on Goals 2000 and the Inclusion of Students with Disabilities* concluded: (1) The expectations of those advocating standards-based reforms currently exceed the limits of existing professional practice and expert knowledge; and (2) The professional and technical problems associated

with standards-based reform are compounded when it is melded with special education (Committee on Goals 2000, 1997, pp. 64 – 65). The committee accepted the principles that all students should have access to challenging standards and that there is merit to an accountability system that includes students with disabilities, but noted that when states and localities are implementing standards-based reforms they “should design their common content standards, performance standards, and assessment to maximize participation of students with disabilities” (Committee on Goals 2000, 1997, p. 197).

Perhaps the most contentious component of standards-based reform is the linkage between standards and high stakes testing. We have already suggested the potentially negative consequences of standards-based reform with high stakes testing, and space limitations do not allow us to expand the discussion about high stakes testing to the extent we would prefer. However, we would note that the *National Research Council’s Board on Testing and Assessment’s Committee on Appropriate Test Use* (CATU), a federal committee commissioned to determine the appropriateness of high stakes testing (e.g., those that have meaningful, and often serious, consequences for students or educators, such as grade retention or promotion, graduation, loss of school funding and so forth) to students with disabilities concluded that high stakes tests should be used only after implementing changes in teaching and curriculum to ensure that students have been taught the knowledge and skills that will be tested (CATU, 1999 p. 6). Given that one intent of standards-based school reform is to change instruction and learning by first setting high standards, one cannot assume *a priori* that students have received instruction that ensures they have been taught the particular content or skill area.

With regard specifically to students with disabilities, the committee expressed concern over the validity of using large scale tests with students with disabilities, who are rarely included in norming samples. After noting the need for accommodations and individualized interpretations of scores, the committee noted that “because a test score may not be a valid representation of the skills and achievements of students with disabilities, high stakes decisions about these students should consider other sources of evidence, such as grades, teacher recommendations, and other examples of student work” (CATU, 1999, p. 295).

Given the potentially negative impact of high stakes testing on students with and without disabilities, there are concerns over their use with

specific populations, particularly students with mental retardation. While the national dialogue about testing and standards-based reform must begin to address issues of the potential for unintended consequences of their use across an array of students, including students with disabilities, we believe that if considered separate from the issue of high stakes testing, the effort to ensure that all students have access to the general curriculum is an effort worth pursuing. Before returning to this question, however, we need to examine what it is that is meant by having 'access' to the general curriculum.

What is Meant by Access?

Although they vary widely from state to state, content and performance standards often involve learning complex constructs and applying higher order cognitive skills and strategies that some (or many) students with mental retardation may not acquire. Is it the intent of IDEA that the educational program of a student with a disability be determined only by the general curriculum? For a variety of reasons, the obvious answer to this must be 'no.' First, imposing an externally-mandated curriculum on students with disabilities is inconsistent with the requirements in the IDEA for the development of individualized education programs. Individualization is a hallmark of disability policy in the US in general (Turnbull & Turnbull, 1998), and a focus on educational supports and services to meet each student's unique educational needs is at the core of the IDEA and 'special' education practice (Knowlton, 1998).

The intent of providing 'access' is identified in the IDEA regulations:

[the access provisions] that require a description of how a child's involvement in the general curriculum is a statutory requirement and cannot be deleted. The requirement is important because it provides the basis for determining what accommodations the child needs in order to participate in the general curriculum *to the maximum extent appropriate* [italics added] (Federal Register, 1999, p. 12592).

The modifying clause to associate with 'access', therefore, is 'to the maximum extent appropriate to the needs of the child.' What is determined as 'appropriate' is, basically, an IEP team decision, and the challenge ahead is to reform the IEP process to ensure that decisions about a given student's education are driven by the high expectations embodied in the general curriculum as well as the

unique needs of the student. For purposes of the current discussion, emphasis should be placed as much on the word 'maximum' as 'appropriate.' The clear mandate is to maximize the student's involvement in the general curriculum. Section 300.347(a;3) in IDEA requires that the IEP include:

A statement of the special education and related services and supplementary aids and services to be provided to the child, or on behalf of the child, and a statement of the program modifications or supports for school personnel that will be provided for the child

- (i) to advance appropriate toward attaining the annual goals;
- (ii) to be involved and progress in the general curriculum;
- (iii) to be educated and participate with disabilities and non-disabled children...

As a final indicator of the degree to which students with mental retardation are to have access to the general curriculum, the federal regulations note at several points that services, supports, modifications, and goals should ensure that students 'progress' or 'advance' in the general curriculum. In fact, the statutory language in IDEA does not use the phrase *access to the general curriculum* at all, referring instead to student participation and progress in the general curriculum. It should, thus, be noted that both the federal regulations and statutory language anticipate progress or advancement in the general curriculum, and decisions about a student's involvement in the general curriculum should be within the context of ensuring success and progress.

Is Access to the General Curriculum Important for Students with Mental Retardation?

Secretary Riley identified three primary reasons for aligning the 1997 amendments to IDEA with national school reform efforts: to ensure that all students have access to a challenging curriculum, to ensure that all students are held to high expectations, and to ensure that students with disabilities are not left out of the accountability system being established for schools. Accountability is established primarily through the use of assessments that are based on curriculum standards. The question of merit is: What should education be held accountable for? The answer to that is at least partly reflected in the other reasons -- we are accountable for ensuring that all students receive an education that challenges them and that

teachers and others hold high expectations for student achievement. For these two reasons alone, we contend that it is important that students have access to the general curriculum.

The existing ‘accountability’ mechanism in special education is the IEP process. The IDEA contains regulatory language, procedural safeguards, and due process procedures to ensure that students receive a free, appropriate public education. Turnbull and Turnbull (1998) noted that IDEA itself defines an appropriate education as special education and related services that: (1) are provided at public expense, under public direction and supervision, and without charge; (2) meet the standards of the state education agency; and (3) include appropriate preschool, elementary school, and secondary school education (pp. 173 – 174).

The IDEA’s definition of an *appropriate* education is, as noted, a procedural one. An appropriate education is one that conforms to the process outlined in IDEA, which will presumably produce an acceptable result for the student. However, there is reason to question whether that presumption is accurate or, more specifically, if the procedural accountability mechanisms are sufficient in and of themselves. Indeed, we question if we have not sacrificed *quality* in education for the sake of *individualization* for many students with mental retardation. We will examine some of the issues that lead us to conclude that gaining access to the general curriculum is important for students with mental retardation.

Expectations are low for students with mental retardation. Feldman, Saletsky, Sullivan, and Theiss (1983) pointed out “one of the best supported findings in recent years demonstrates that the expectations that teachers hold about student performance are related to subsequent student outcomes” (p. 27). Although there is limited literature to document one way or another, it seems that students with mental retardation are more likely to be held to lower expectations. Research has shown that teachers form expectations according to special education labels independent of other information about student capacity, with students with mental retardation held to the lowest expectations (Rolison & Medway, 1985). Labels that emphasize student incapacity (e.g., “Trainable,” “Educable”) and which are stigmatizing (e.g., “Retarded,” “Handicapped”) remain painfully prevalent in schools across the country despite major efforts to employ people-first language. Such labels serve to limit expectations and reinforce stereotypes. One hardly expects someone labeled by schools as

“trainable” to become a spouse, hold a high paying job or generally contribute to society in a meaningful manner. In fact, our own research suggests that many teachers who work with students with cognitive impairments seem to concur that expectations are too low. Agran, Alper, and Wehmeyer (2000) asked teachers questions about their perception of the access requirements for their students with significant disabilities. When asked if students with moderate to severe disabilities should be held accountable to the same performance standards as nondisabled students, 93% of the 60 teachers responding indicated they disagreed or strongly disagreed. Nevertheless, when asked if ensuring students’ access to the general curriculum would help *increase educational expectations* for students with moderate to severe disabilities, 68% either agreed or strongly agreed. In other words, teachers agreed that the expectations held of students with cognitive disabilities should be raised, but do not think this can be done by holding these students accountable to the general curriculum.

Individualization does not guarantee quality. Quite simply put, individualization is not, in and of itself, an assurance of a high quality educational program; it simply ensures that the educational program is individually-determined. Done well and involving creative, committed people, the individualized planning process can lead to exciting outcomes in the design of educational programs. Done poorly and subject to the often politicized nature of group decision-making, funding restrictions, and the myriad of other influences on such decisions, the individualized planning process can lead to routinized educational programs that reflect the stereotypes and low expectations of the decision-makers.

Accountability for process and accountability for progress are not the same thing. Over the past few years, the efficacy of special education has been a topic of focus (Kavale & Forness, 1999). There was considerable pressure placed on the federal Office of Special Education Programs (OSEP) to produce evidence of the efficacy of the programs they have supported over the years, and accountability became a key issue at the federal and state level. As we have discussed, accountability is an important factor in the standards-based reform effort. While the IEP-based accountability system provided a process-driven framework to legally ensure equal treatment and due process, it has also served to buttress the perception that ‘special education’ is a system that is orthogonal to the rest of the education system. By and large, special education has not been at the table at discussions about school reform. Yet, in only a short

time the focus on the involvement of students with disabilities in state assessments has resulted in “dramatic increase in the number of states indicating they used data from students with disabilities on school participation, exiting school, and achievement in their state or local accountability systems” (Elliott, Erickson, Thurlow, & Shriner, 2000). In other words, a focus on access to the general curriculum and involvement in testing has taken the first steps toward ensuring that students with disabilities are part of the accountability system in education.

We are not implying that the individualized approach be abandoned, especially when that curriculum is not designed to include students with disabilities. Instead, we need to ensure that students with mental retardation are held to high expectations and are provided ample opportunities to succeed within an educational program derived from the general curriculum and adapted, augmented, or altered on an individual basis. For better or for worse, the IEP process is with us and is likely to remain with us, and we believe that the way to ensure access is by revitalizing the IEP decision-making process with particular focus on the general curriculum.

Gaining Access to the General Curriculum for Students with Mental Retardation

The “Individualized Education Program” is defined in the IDEA as a “written statement for each child with a disability that is developed, reviewed, and revised in accordance with section 614(d)” [Individuals with Disabilities Education Act, 20 U.S.C. 1400 et seq., Sec. 602 (11)]. Section 614 (d) provides a list of what needs to be included in the IEP, including: (1) a statement of the child's present levels of educational performance (which includes a statement of how the child's disability affects the child's involvement and progress in the general curriculum); (2) a statement of measurable annual goals, including benchmarks or short-term objectives, related to meeting the child's needs that result from the child's disability to enable the child to be involved in and progress in the general curriculum; and meeting each of the child's other educational needs that result from the child's disability; (3) a statement of the special education and related services and supplementary aids and services to be provided to the child; (4) an explanation of the extent, if any, to which the child will not participate with nondisabled children in the regular class; (5) a statement of any individual modifications in the administration of State or district wide assessments of student

achievement that are needed in order for the child to participate in such assessment; (6) the projected date for the beginning of the services and the anticipated frequency, location, and duration of those services and modifications; (7) beginning at age 14, a statement of the transition service needs of the child and beginning at age 16 a statement of needed transition services for the child, as well as, beginning at least one year before the child reaches the age of majority under State law, a statement that the child has been informed of his or her rights that will transfer to the child on reaching the age of majority; and (8) a statement of how the child's progress toward the annual goals will be measured, how the child's parents will be regularly informed at least as often as parents are informed of their nondisabled children's progress.

The process by which the IEP is to be determined is specified in great detail by the IDEA, a process that we will not elaborate on, but which includes requirements for IEP format, content, timelines, appeals, and procedural safeguards. At the risk of belaboring what may seem obvious to many, we list the components of the IEP to illustrate the difference between the IEP and what might be construed as the ‘curriculum’ for students who are provided special education services and supports. The IEP, technically, is a written document... a legally-binding document for that matter. Its intent is to put forth the elements of an “appropriate” public education for a student with a disability. But, as we have already intimated, the legal interpretation of ‘appropriate’ is an educational program that conforms to the process requirements in IDEA.

We want to propose a curriculum decision-making model to promote access to and progress in the general curriculum which focuses not on the IEP as a legal, written document, nor on the IEP process as conforming with procedural requirements, but instead on the IEP process as a decision-making process to determine an effective, challenging, educational program for all students. We use the term “educational program” in its broadest sense, encompassing all aspects of the educational experience of students, including the curriculum itself. Sands, Adams, and Stout (1995) distinguished between curriculum as the ‘what’ and instruction as the ‘how’ in describing school process and student experiences. The IDEA access to the general curriculum mandates seem to refer primarily to this “what” component, with the underlying assumption of standards-based reform that by addressing the issues of “what” students are expected to learn (and aligning accountability systems with those

expectations), the “how” of education (instruction) will change.

We would note as well that the curriculum, the “what” of the educational experience, includes a formal and informal component. Doll (1996) noted:

Every school has a planned, formal, acknowledged curriculum, and also an unplanned, informal, or hidden one. The planned curriculum embraces content usually categorized within subjects and subject fields. The unplanned curriculum includes such varied experiences or engagements as advancing oneself inconsiderately in the cafeteria line, learning to like history, protecting one’s front teeth from being pushed down hard on drinking fountains, finding new ways to beat the system, and resisting pressure to smoke marijuana (p. 14 -15).

The IDEA access to the general curriculum mandates address the formal aspects of curriculum, not the informal. Certainly, however, IDEA’s emphasis on inclusion addresses the informal aspects of curriculum.

Design of a student’s educational program through the IEP process is intended to address all aspects of the educational experience – including formal and informal curriculum (what), instruction (how), and placement (where). Decisions pertaining to the student’s access to and progress in the general curriculum are but one component of the decision-making process. However, we contend that this one component can change the focus of the decision-making process and, potentially, achieve the higher expectations anticipated by the IDEA framers.

A Curriculum Decision-Making Model to Promote Access to and Progress in the General Curriculum

The decision-making model that follows is delimited in scope as per the previous discussion. That is, we are proposing the model to provide a decision-making process to enable IEP teams to address how the student’s formal curriculum is determined that is in line with the provisions of the IDEA with regard to access to the general curriculum. Several assumptions underlie this model, and warrant discussion before describing the model itself.

- The model assumes presence of a ‘general curriculum’ that describes the formal content (the “what” of the educational experience) for all

students. Until the advent of the national focus on standards-based reform, many states and local districts did not have a ‘general curriculum’ to speak of and, often, that curriculum was synonymous with or determined by instructional materials (textbooks, workbooks, etc.). That seems less likely now, as virtually all state education agencies have developed or are in the process of developing state standards or benchmarks intended to drive school reform efforts.

- The model does not assume that the general curriculum is designed with the needs of a diverse student population in mind. There is a need to design curriculum with the principles of ‘universal design’ (discussed subsequently) in mind so that the curriculum might have broad benefit, but the decision-making model does not require such flexibility to be implemented.
- The model does not address all components of the decision-making process leading to an “appropriate educational program” but, instead, focuses on enabling IEP teams to come to decisions about an “individualized formal curriculum,” referring to the formal content of the educational program. We believe that this process is a critical step in the design of a challenging, high quality educational program. Both the development of specific goals and the identification of instructional activities flow from identification of content areas. The decision-making process will, by necessity, have to include an assessment or evaluation component that likely precedes the content decision-making step, with that effort aimed at determining a student’s current levels of functioning and identifying functional needs.
- We emphasize that this process *begins* with the general curriculum, taking into account individual student needs. Most models of curriculum decision-making for students with severe disabilities begin not with the general curriculum but, instead, with individually-determined content needs. In some cases efforts are made to overlay or map these individually-determined needs onto the general curriculum or, more frequently, fitting individually determined needs into the routine of the typical instructional day. The result from this is often an alternate curriculum, one that is outside the general curriculum. If this alternative curriculum is high quality, this does not seem to be overly problematic. When, however, the alternative

- curriculum is of questionable quality and based on low expectations and stereotypes, simply mapping it onto the general routine of the day does not serve to raise expectations or to ensure access to a challenging curriculum. By beginning with the general curriculum, then working through the three levels of modifications suggested, we believe that IEP teams will work from high standards and high expectations towards individualization.
- Our model has the ‘curriculum’ as the referent point for gaining access. That is, all three levels of modification are to the curriculum itself. We do so to ensure that decision-makers are working from the curriculum and not exclusively student characteristics.

Figure 1 illustrates a flow-chart for the proposed model. The intent is that IEP teams will use the process to make decisions about the student’s formal curriculum that includes input from both the general curriculum and individual student needs.

The model emphasizes three levels of curricular modifications:

1. *Curriculum adaptation*: modification to the presentation and representation of, and the ways in which students engage in and with, the curriculum (CAST, 1998 – 1999);
2. *Curriculum augmentation* (Knowlton, 1998): enhancing or expanding the curriculum to teach students strategies or methods to impact and improve their capacity to succeed within the curriculum; and,
3. *Curriculum alteration*: Changing the general curriculum in some way so as to address unique or more functional knowledge and skill content areas.

The model assumes that students will vary according to the degree to which curriculum modifications need to be made. For some students the general curriculum will be the most appropriate ‘formal curriculum’ without adaptation. Other students will need curriculum adaptations to progress, while others will need a combination of adaptation and curriculum augmentation. Finally, some students will need a combination of all three curriculum modifications to succeed. When making decisions about adaptation, augmentation, and alteration, there needs to be a consideration of both the content and demands of the curriculum and needs and strengths

of the student. To this point, virtually all discussions of gaining access to the general curriculum for students with disabilities have focused on curriculum adaptation, primarily through the use of technology, as the primary strategy. While adapting the presentation or representation of the curriculum or changing ways in which students engage with the curriculum (discussed subsequently) may be adequate to provide access for students without mental retardation, it seems evident that such adaptations will not be sufficient to ensure access to students with mental retardation. We propose that augmenting the general curriculum by adding content to the curriculum to enable learners to succeed within the curriculum (Knowlton, 1998) is a necessary bridge between adaptations and altered curricula, and we will focus mostly on that aspect of the model.

We use the term “modification” as a global descriptor of each of the actions, not in the sense that we change or modify the content in the curriculum, but instead that something about the curriculum is modified, whether it is changing the font size in a text (adaptation), adding lessons teaching students to self-instruct (augmentation), or actually changing the content (alteration). For the remainder of this article, we want to briefly describe the types of modifications that are captured under the actions of curriculum adaptation, augmentation, and alteration, with particular focus on curriculum augmentation.

The model incorporates the IDEA 1997 mandate that assistive technology (AT) be considered for all students with disabilities. Assistive technology can be important at two levels. Obviously, the use of assistive technology devices is a primary focus in the design of curriculum adaptations. Before using AT as a means to adapt the curriculum, however, AT might be used to remove the barrier introduced by a disabling condition, which, in turn, might negate the need to modify the curriculum. Providing large print text is a curriculum adaptation in that it changes something about the curriculum itself (e.g., the representation of the information by larger text size). However, if through some assistive device, even one as simple as eye glasses, the student can be enabled to *see* typical-size print, the use of AT becomes a way of providing access without engaging in curriculum modifications.

By linking the consideration of AT to the curriculum decision-making process, we believe that decisions about technology-based supports will be grounded in individual student needs *and* the general curriculum, not just one or the other. This is an important component for students with mental retardation, who often do not have access to

technology that is cognitively accessible (Wehmeyer, 1998; 1999). The consideration of AT needs to be a part of the decision-making process related to other components of the educational program as well.

Implementing the model. As depicted in Figure 1, we suggest that the general curriculum without modification may be appropriate for some students. While such a scenario may be unlikely for most students with mental retardation, who may require multiple modifications to benefit from the curriculum, it will be the case that some students with disabilities will not need curriculum modifications to succeed or, as indicated, will only need some student-focused (as opposed to curriculum-focused) action (e.g., AT) to succeed in the general curriculum. Team members should be familiar with the curriculum and, when necessary, the standards from which that curriculum has been derived. The team should address the question "Is the general curriculum adequate to meet the students instructional needs?" It is feasible that for some students the answer to this might be yes, thus ending the curriculum decision-making process. For most students with mental retardation, however, the likely responses are either "no" or a qualified "yes", with some components of the general curriculum adequate, but others inadequate to meet unique student needs. Whatever aspect of the general curriculum is appropriate without modification should be identified as a portion of the student's 'formal curriculum.'

The next decision point relates to consideration of the use of assistive technology to alleviate or mitigate aspects of the student's disability that influence or impact their interaction with the general curriculum. Those aspects of the general curriculum that become appropriate through the use of assistive technology then become part of the student's formal curriculum. Once that determination has been made, the IEP team needs to consider how the general curriculum might be adapted to make it appropriate.

Curriculum Adaptation: Modifying Curriculum Presentation, Representation and Student Engagement.

Curricular adaptations are designed to overcome barriers inherent in the curriculum for students. Drawing from research at the Center for Applied Special Technology (CAST) on universal design as applied to curriculum (see subsequent section), we have defined curriculum adaptations as efforts to modify the *representation* or *presentation* of the

curriculum or to modify the student's *engagement with the curriculum*. Curriculum *representation* refers to the way in which information in the curriculum is depicted or portrayed. The dominant representation mode is print, usually through texts, workbooks and worksheets, and so forth. There are a number of ways to change the representation, including changing font size or using graphics. Students who have difficulty learning from large sections of text might benefit from adaptations that change the representation of that same information through an outline, depicting information in more manageable chunks, or highlighting key elements in the text. Orkwis and McLane (1998) suggested incorporating "summaries of *Big Ideas*" to improve access for some students with cognitive disabilities. That is, information in the text is represented in the form of summaries of information in the text.

Utilizing Internet-based technologies to represent information has considerable utility in that students provided information via, say, a World Wide Web page (instead of a textbook) can alter the size or color of the font themselves using their browser or such information can be more easily adapted to provide access through graphic, pictorial or iconic representations. Web based information can also provide unique ways of adapting the curriculum through the presentation process. In addition, key themes, words or ideas can be hyperlinked on web sites and take students to another layer of information about that topic, providing a particularly useful form of representing information.

Adaptations in curriculum *presentation* modify the way information is conveyed or imparted. Such presentation has, historically, been through written formats (textbooks, student workbooks, etc.) or verbally (lectures). These primary means of presentation have drawbacks for many students who read ineffectively (or don't read at all) or who have difficulty attending to or understanding lecture-formats. There are a variety of ways of changing the presentation mode, from using film or video sources, to reading (or playing an audiotape of) written materials, to web-based information that can be read through text-reader programs or provided through digitized audio or video transmissions that accompany whatever representation means is used.

Curriculum adaptations that modify the student's *engagement with the curriculum* impact the ways in which students respond to the curriculum. We include these as part of the curriculum because they frequently involve worksheets, or other curricular materials. Again, the typical means of student engagement within the curriculum involve written

responses or, perhaps less frequently, oral responses. However, there are multiple other ways for students to respond or engage in the curriculum, including “artwork, photography, drama, music, animation, and video” (CAST, 1998 – 1999) that would enable students to express their ideas and demonstrate their knowledge.

Importantly, nothing in the curriculum adaptation process changes the content of the general curriculum in any way. Some form of curriculum adaptations will enable most learners to gain access to some components of the general curriculum that they may not have been able to access before, and these components become, again, a part of the student’s formal curriculum. IEP teams will then need to move to the next step, consideration of the degree to which the curriculum can be augmented to provide access.

Curriculum Augmentation Strategies: Enhancement Through Learning Strategies, Self-Regulation and Self-Management, and Self-Determination

Curriculum augmentation involves enhancing the standard curriculum with “meta-cognitive or executive processing strategies for acquiring and generalizing standard curriculum” (Knowlton, 1998, p. 100). The augmentation process does not change the curriculum, but adds to or expands the curriculum to teach or provide students with strategies to succeed within the curriculum. For example, as previously mentioned, providing information in an outline format rather than a straight narrative format is a type of curriculum adaptation that changes the way information is represented. However, teaching the student to start from one source (narrative or text) and, in turn, create an outline from that narrative to aid in comprehension is an example of curriculum augmentation. That is, the curriculum is expanded to teach not only the content area of concern, but also the strategy of outlining that can be applied by the student to learn the content more effectively.

There are a variety of methods for augmenting the curriculum. Cognitive or learning strategies have been used in the field of learning disabilities to enhance curriculum and improve student performance. Rosenthal-Malek and Bloom (1998) defined cognitive strategies as “cognitive operations, over and above the processes directly involved in carrying out a task, that help the student to attack a problem more effectively” (p. 139). By and large, a cognitive or learning strategies approach to the

education of students with mental retardation has been viewed primarily or exclusively in the context of teaching academically-oriented content, and has been posed as, essentially, antithetical to a functional or life skills approach. There are legitimate concerns with the cognitive or learning strategies approach as it has been applied to mental retardation. Polloway, Patton, Epstein, and Smith (1989) noted that in cases where a cognitive strategies approach is used exclusively for students with mental retardation, there is a tendency to narrow the curriculum, especially with regard to functional skills instruction. Also, there are concerns about the utilization of cognitively-based instructional strategies with a population of students whose primary limitation is, in fact, cognitive in nature. There is a need for more research on cognitive strategies and learning strategies as they apply to students with mental retardation and, likely, the need for the development of new or revised strategies that are beneficial.

An emphasis on the use of strategies to create ‘active learners’ is also found in the research into self-regulation and self-regulated learning. Whitman (1990) defined self-regulation as “a complex response system that enables individuals to examine their environments and their repertoires of responses for coping with those environments to make decisions about how to act, to act, to evaluate the desirability of the outcomes of the action, and to revise their plans as necessary” (p. 373). Zimmerman (1990) defined self-regulation as the degree to which “individuals are metacognitively, motivationally, and behaviorally active participants in their own learning process” (p. 3), while Schunk (1994) defined self-regulated learning as the “process whereby students activate and sustain cognitions, behaviors, and affects that are systematically oriented toward the attainment of goals (p. 75). The use of strategies to promote self-regulation, self-regulated learning and student-directed learning provide, together, another means of augmenting the curriculum.

Student-directed learning strategies involve teaching students strategies that enable them to modify and regulate their own behavior (Agran, 1997). The emphasis in such strategies is shifted from teacher-directed instruction to enabling the student to regulate his or her own behavior. A variety of strategies have been used to teach students, including students with significant disabilities, how to manage their own behavior. Among the most commonly used strategies are permanent prompts, self-instruction, self-monitoring, and self-reinforcement. Both cognitive strategies and self-

regulation or self-management strategies have been shown to have value in generalization.

A third means of expanding the curriculum to provide access is to enhance student self-determination. A focus on promoting self-determination will include efforts to enhance goal setting, problem solving and decision-making skills, self-awareness, and self-advocacy and leadership skills. Like student-directed learning strategies, promoting self-determination focuses on student control or direction over the learning process and is goal oriented. Efforts to enhance the latter, however, are more global in nature, emphasizing efforts to enhance individual capacity, modify or create environments that promote causal agency, and design supports or accommodations to ensure control and choice. Space limitations of this article necessitate that we keep our discussion about the promotion of self-determination to a minimum, other than to note that there are a growing number of resources to enable educators working with students with disabilities to become more self-determined (Field, Martin, Miller, Ward, & Wehmeyer, 1998; Field, Hoffman, & Spezia, 1999; Wehmeyer, Agran, & Hughes, 1998).

Curriculum Alterations: Toward Functionality

The final step in the decision process is for IEP team members to consider if the student's formal educational program is complete with the previous steps or, as will likely be the case for many students with mental retardation, there is a need to add content to the student's formal curriculum that is not found in the general curriculum. This step, examining curriculum alterations, provides the means to address unique needs, often related to more functional concerns. The decision-making processes leading to curriculum alteration are already widely used in the education of students with mental retardation. The IEP team must examine what instructional efforts to address skills or knowledge are important for the student and are not addressed by the general curriculum, and add content areas to meet those needs.

Next Steps

There is much yet to be accomplished with regard to the access to the general curriculum mandates in the IDEA. Our model deals specifically with the 'what' of the educational experience, the curriculum. In our estimation, decisions about the 'what' (e.g., content and materials) should, in turn, drive decisions about

the 'how' and 'where' of the educational program. The 'how' is, of course, instruction. Teachers use a variety of instructional methodologies based on the particular student's needs and the content under consideration. A teacher may use role playing to teach social behaviors, social simulation and social inquiry strategies to examine social problems and solutions, assertiveness training to teach self-advocacy skills, or operant methods to teach vocational skills. One of the premises of standards-based school reform is that the establishment of high standards will result in changes to the instructional strategies used in the classroom. There are still issues to consider with relation to the 'what' of the educational experience for students with disabilities, most notably the importance of universal design, as discussed subsequently. However, we also need to focus on the 'how' of the educational experience to examine what instructional strategies work (Kavale & Forness, 1999), to develop new methods and models of teaching (Wehmeyer, Palmer, Agran, Mithaug, & Martin, 2000), and, particularly for students with mental retardation, identify instructional strategies that have been used successfully with other students and which might benefit students with mental retardation, including the cognitive or learning strategies mentioned earlier as important for curriculum augmentation (Deshler, Ellis, & Lenz, 1996; Bulgren and Lenz, 1996).

With regard to the 'where' question (e.g., where students receive their educational experiences), we need a better understanding of the impact of specific environments on students' access to the general curriculum. Our belief, though currently just a hypothesis, is that students with mental retardation who receive their educational program with same age peers without disabilities will have greater access to the general curriculum. If the intent of the IDEA mandate on access is to raise expectations and provide a challenging curriculum for all students, it makes no sense to retain learning environments that limit such access and propagate low expectations and substandard curriculum experiences. We suggest, as well, that this dialogue needs to be in the context of school reform. While special educators tend to think of the 'where' issue as referring to special classrooms versus the general education classroom, the fact is that there are numerous school reform models that emphasize the importance of other learning environments for all students; environments that are primarily community-based. Given the importance of community-based learning experiences for students with mental retardation, it is important to ensure that these students have access to learning in

multiple environments and that this is the norm for all students and not just students with severe disabilities.

Universal design. Returning to the issue of ‘what’ for a moment, we recognize that what constitutes the ‘general curriculum’ in many states and local districts is too narrow and not designed with the intent of including all students. There is a need to incorporate principles introduced in the literature around universal design to curriculum design and development. The principle of universal design emerged from the field of architecture. The concept of universal design as applied to buildings and a built-environment suggests, quite simply, that all such buildings/environments should be accessible to all people (Moon, Hart, Komissar, & Friedlander, 1995). These principles were, subsequently, applied to the design and development of consumer products and assistive devices with the same intent. Thus, the principle of universal design was introduced to ensure that members of certain groups, like people with disabilities or people who are elderly, have access to the environment or products that could enhance their quality of life. Buildings are designed with adequate ramps, wide enough doors, or accessible restrooms, and products are designed with simple controls and clearly understandable uses. Given the emphasis of universal design principles on ‘gaining access’ to environments and products, it seems logical that educational policymakers would turn to this principle to assist in understanding how to gain access to curriculum. Researchers at CAST (1998 – 1999) noted:

The basic premise of universal design for learning is that a curriculum should include alternatives to make it accessible and applicable to students, teachers, and parents with different backgrounds, learning styles, abilities, and disabilities in widely varied learning contexts. The “universal” in universal design does not imply one optimal solution for everyone, but rather it underscores the need for inherently flexible, customizable content, assignments, and activities (CAST, 1998 – 1999).

Orkwis and McLane (1998) defined ‘universal design for learning’ as “the design of instructional materials and activities that allows the learning goals to be achievable by individuals with wide differences in their abilities to see, hear, speak, move, read, write, understand English, attend, organize, engage, and remember” (p. 9). As such, the onus is on curriculum planners to employ principles of universal design to ensure that students with a wide range of capacities

can access, advance, and succeed in the curriculum. This is, we believe, rarely the case and while ‘retrofitting’ the curriculum to provide access may be the only option for educators working with students with mental retardation today, there must be a concentrated effort to change the design and planning process if fundamental change is to occur.

It seems apparent that if students with disabilities, as well as other students like students who speak English as a second language or children from impoverished environments, are to have access to the general curriculum, that curriculum and the standards that drive its design, need to be developed with all students in mind, not just an elite few.

IEP teams as decision-making entities. The 1997 amendments to IDEA placed additional responsibility for making a variety of decisions on the IEP team, including decisions about access to the general curriculum, need for and use of assistive technology, and determinations about age of majority requirements. The model we have proposed requires that IEP teams serve the role envisioned in IDEA: A decision-making body to design the student’s curriculum. However, our own experiences and those of many others attest to the fact that many IEP meetings are not ‘decision-making’ meetings. The IEP team, as an entity, typically comes together only annually and, partly due to the infrequency of the meeting, often focuses on crises resolution instead of being a deliberative process. On the other extreme, meetings are too often perfunctory with any real decision about the curriculum or any other topic made in advance of the meeting. One way or the other, the IEP process appears to fall well short of the deliberative, decision-making body that is required for the design of a student’s curriculum. There is a need for the field to consider the capacity of IEP teams to make effective decisions about curriculum content and, more specifically, to identify the supports and processes that enable this outcome.

Whole school interventions. A final suggestion for achieving access to the general curriculum for youth with mental retardation will focus on the implementation of whole school interventions that promote progress in the general curriculum for all students, including students with disabilities. Many of the strategies to adapt and augment the curriculum so that students with mental retardation will progress will, in fact, benefit all students, not only students with cognitive disabilities. Using curricular materials that embody the principles of universal design, teaching students skills and strategies to self-regulate learning, providing students with multiple means to respond to the curriculum; all of these will be

beneficial to students with and without disabilities. If such activities become practice throughout the school, it will minimize the need to provide highly individualized services for some students.

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Figure 1. A model to gain access to the general curriculum

Portions of this article are adapted from Wehmeyer, Sands, & Knowlton (Eds.), *Curriculum Decisions and Educational Supports for Students with Mental Retardation: Promoting Access to and Engagement in the General Curriculum*, a manuscript in preparation for publication with Paul H. Brookes, Baltimore, MD. These efforts have been supported by U.S. Department of Education, Office of Special Education Programs grant #H324D990065, Dr. Anne Smith, OSEP Program Officer, awarded to the University of Kansas. Our appreciation to the department and Dr. Smith, although the opinions and conclusions expressed here do not necessarily represent the views of the U.S. Department of Education. Correspondence concerning this article should be addressed to Michael L. Wehmeyer, Department of Special Education, Beach Center on Disability, The University of Kansas, Haworth Hall, 1200 Sunnyside Avenue, Room 3136, Lawrence, KS 66045. E-mail: wehmeyer@ukans.edu.

Received: 19 June 2000

Initial Acceptance: 15 August 2000

Final Acceptance: 30 November 2000

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