

**Review of Secondary School Curricula Issues and Impact  
Upon Access and Participation of Youth with Disabilities in Postsecondary Education**

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Robert A. Stodden, Ph.D.

Norma Jean Stodden, Ph.D.

Shane Gilmore, M.A.

L. M. Galloway, M.Ed. Candidate

National Center for the Study of Postsecondary Educational Supports

Center on Disability Studies/UCE

University of Hawai'i at Manoa

1776 University Avenue

Honolulu, Hawai'i 96822

Tel: (808) 956-9199

Fax: (808) 956-5713

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### **Abstract**

Supporting and teaching students with disabilities to learn rigorous, standards-based curriculum in secondary school is a complex and difficult issue for educators. During the 1997 reauthorization of the Individuals with Disabilities Education Act (IDEA), policy makers and advocates took steps to ensure students with disabilities were included in standards-based general education curricula and statewide assessments. Educators have since been requested to do follow-up studies of students after they leave high school to determine the impact of the new policy upon access and participation of youth with disabilities in postsecondary education and employment. This review examines three areas of significant issue thought to have an influence upon student's performance in rigorous academic curriculum and subsequent access and performance in postsecondary education. The areas, as identified by the United States Department of Education (1999), are as follows: (1) how do high school students with disabilities learn challenging academic content, (2) how do teachers learn and use effective research-based instructional practices to help students with disabilities learn rigorous, standards-based curricula, and (3) how do contextual factors in secondary classrooms and schools influence teaching and learning. The authors conducted an initial review of each of the three areas, and provide a discussion and recommendations for research questions for further study.

## Introduction

The Individuals with Disabilities Act Amendments of 1997 (IDEA) (PL 105-17) legislated a number of new obligations for school systems to ensure greater access and performance outcomes for students with disabilities. Primary among them are: (a) demonstrable improvement in the long-term results for high school students with disabilities through enhanced involvement and progress in general education curricula (McLaughlin & Verstegen, 1998; Vaughn, Schumm & Brick, 1998) and (b) increased participation of these students in general state and district-wide assessments (Gronna, Jenkins & Chin-Chance, 1998; IDEA 97 Sec. 614(d); Vanderwood, McGrew & Ysseldyke, 1998).

Although various national school reform initiatives (e.g., The Goals 2000: Educate America Act of 1994, The School-to-Work Opportunity Act of 1994, and Improving America's Schools Act of 1994) assume that every aspect of the secondary school's instructional system can and will challenge all students academically, there has been a troubling failure to produce coordinated and integrated improvements that accommodate and support students with disabilities in learning rigorous, standards-based curriculum (Berliner & Biddle, 1996; Edgar, 1988; Hatch, 1998; USDOE, 1995;1996; Waldron & McLeskey, 1998).

The National Longitudinal Transition Study (NLTS) (Blackorby & Wagner, 1996; Wagner & Blackorby, 1996) indicates that students with disabilities spend an average of 70 percent of their school day in general education classrooms being exposed to general academic curricula. But to date, placement in general education has resulted in little post-school benefit to these students (Hocutt, 1996; Wagner & Blackorby, 1996). By most measures of academic and post-high school success, secondary school students with disabilities experience poorer outcomes than their non-disabled classmates. For example, in 1996, only 19% of high school graduates

with disabilities, as compared to 53% of youth in the general population, attended some type of postsecondary school two years after leaving high school (Blackorby & Wagner, 1996). In addition, though twice as much money is spent on students with disabilities as compared to general education students (Parrish, 1995; US Department of Education, 1989), dropout rates for students with disabilities are nearly double that for youth in general education (Balcazar & Keys, 1997; Capital Publications, 1997; Cheney & Harvey, 1994; Edgar, 1988; Knitzer, Steinberg, & Fleish, 1990; Neel et al., 1988; Wagner, 1991; Wagner et al., 1992).

Though the NLTS study confirms that no magic bullet of service or support consistently aids high school students with disabilities in learning challenging academic content, the obsession to seek out such immediate “fix-all” solutions causes stakeholders to overlook the substantial body of promising research concerning the complex learning needs of adolescents with disabilities in general education settings and subsequent postsecondary education programs (Bos, 1995; Carnine, 1997; Cawelti, 1997; Council for Exceptional Children (CEC), 1998; Slavin & Braddock, 1993; Waldron & McLeskey, 1998; Warner, Cheney & Pienkowski, 1996; Zigmond, Jenkins, Fuchs, Deno, Fuchs, Baker, Jenkins, & Couthino, 1995). Research conducted in a number of targeted areas, might easily provide a systematic approach for a variety of schools to enable them to select and implement the best strategies, supports and models for their unique students and communities. Further, by fully involving the range of stakeholders (teachers, administrators, students, families, advocates) in such research, the gap between research and practice could be more effectively addressed.

### **Scope of Secondary Education Reform and Standards-Based Curricula**

During the 1990s, the major focus of education reform was to develop new, more rigorous state and district standards for learning. The argument for standards-based reform

maintained that if states set high standards for student performance, developed assessments to measure the students' performance, gave schools the flexibility they would need to change curriculum, instruction, and school organization so students could meet the standards, and held schools accountable for meeting performance standards, then student achievement would rise (Quenemoen, Lehr, Thurlow, & Massanari, 2001).

Most standards-based reforms strive to apply the same high standards to all students, including those with disabilities. And while debate continues as to the exact nature and extent of these standards, national consensus has been reached on three guiding principles inherent in federal legislation: (a) there will be challenging standards; (b) all students, including students with disabilities, should have the opportunity to achieve these challenging standards; and (c) policy makers and educators should be held publicly accountable for every student's performance (CEC, 1998; McDonnell & McLaughlin, 1997; Wagner, 1998).

As McDonnell & McLaughlin (1997) note, "For many students with disabilities, this represents a striking change. Whereas the framework of the standards-based reform stresses accountability for outcomes and applies uniform standards to all students, the legal framework under which students with disabilities have been educated for two decades stresses the individualization of goals and instruction and emphasizes accountability for procedural compliance rather than academic outcomes. Moreover, many students with disabilities have been routinely excluded from the large-scale assessments that have now become the backbone of accountability in standards-based reforms". For example, a study of state-level educational accountability systems and the inclusion of students with disabilities, found only 32 states could even report having readily available information on the numbers of students with disabilities who participated in statewide assessments, and only six states reported having Individualized

Education Plans (IEPs) which documented the link between a student's individualized program and statewide assessments (Erickson & Thurlow, 1997). The Center for Policy Research on the Impact of General and Special Education Reform (1996) reported that, in the 19 states surveyed, “special education was not playing a major role in the development of either state content standards or specific curriculum frameworks which served as a basis for statewide assessments”.

As pointed out in the proceedings for a National Center on Secondary Education and Transition Capacity Building Institute (2001), there are numerous perceptions of positive and negative consequences for students with disabilities as a result of standards-based reform. The perceived positive consequences for students with disabilities included higher levels of learning and achievement toward common standards, increased access to general education curriculum, increased opportunities to learn grade level material, and more meaningful diplomas because the students and system are held accountable. The perceived negative consequences for students with disabilities included: lowered expectations on IEP objectives to ensure students could meet assessment criteria; misinterpretation of achievement results or inappropriate use of scores; higher rates of failure and dropping out of school by students with disabilities associated with challenging standards and inappropriate use of assessment data; problems with staff burnout and cheating on tests because of the challenges of implementing the reform; and finally, schools becoming less inclusive of students with disabilities because of test pressures and the probability that too many students with disabilities would lower the accountability index rating for the site (Quenemoen et al., 2001).

In the broadest terms, the general curriculum amendments to IDEA 1997 seek to integrate students with disabilities into the life of mainstream secondary schools where, hopefully, they may be better prepared to make meaningful adjustments to adult life and participate in

postsecondary education and/or employment. In the context of standards-based reforms, this means that both general and special educators will need to learn new research-based content and strategies, or how to apply what they already know with greater success, when teaching and assessing students with disabilities (National Association of State Directors of Special Education, 1999; McGregor, Halvorsen, Fisher, Pumpian, Bhaerman, & Salisbury, 1998; Pedroza, Mueller, & Whitley, 1999; Alford, 1997). Thus far, however, efforts to incorporate students with disabilities into core high school academic programs have been hindered by a number of factors. These include a shortage of financial and professional resources, an inadequate research base to guide effective change, and philosophical ambiguities posed by a firmly entrenched system of grouping by ability that often exposes students with disabilities to dramatically different and unequal levels of curricula (Jorgensen, 1997; Oakes & Wells, 1998; Vaughn, et al., 1998). The purpose of this review is to identify and explore secondary school curricula and closely related issues that impact upon educational performance and outcomes for youth with disabilities, including access to and participation in postsecondary education and/or employment.

## **Method**

In constructing this review, we examined information from an extant knowledge base to be able to explore, identify, and respond to the critical gaps. Three questions, identified in a Request for Proposals by the United States Department of Education (Office of Special Education Programs, RFP 84.324S. April, 1999), were seen as having potential significance regarding the secondary school preparation of youth with disabilities for access and participation in postsecondary education. The three questions were: (1) how do high school students with disabilities learn challenging academic content; (2) how do teachers learn and use effective research-based instructional practices to help students with disabilities learn rigorous, standards-

based curricula; and (3) how do contextual factors in secondary classrooms and schools influence teaching and learning of challenging academic content? The three questions are identified, explored, and organized here in a manner meaningful for use by policy makers, researchers, and practitioners. Also, the review explores and organizes information beyond that found in the literature, by drawing on consumer perspectives of the issues. Finally, we provide a discussion and summary of responses to the three questions, followed by recommendations for researchers, policy makers, administrators, educators, parents and youth with disabilities.

Literature was gathered using computer-based searches of several electronic databases covering the past twenty years, including the ERIC database and psychological abstracts. Also, recent project reports and other unpublished documents were searched. The review was limited to the nature and scope of literature and project information available within the three areas of question, as delineated by the United States Department of Education, and to the information influencing access and participation of youth with disabilities within postsecondary education.

The content of articles, project reports, and other documents deemed pertinent to the three areas of question were systematically analyzed applying multivocal literature (Ogawa & Malen, 1991) and participatory action research (PAR) (Brydan-Miller, 1997; Whyte, 1991; White, Nary, & Froehlich, 2001) approaches. Multivocal literature, such as found in this review, is characterized by an abundance of diverse documents and a scarcity of systematic investigations. Further, a number of perspectives or voices (educators, researchers, administrators, parents, youth with disabilities) are found to influence the findings and conclusions drawn from this base of information. To further validate the findings and recommendations of this review, the authors applied a participatory action research process, whereby consumers of the review and findings, systematically provided their perspective. This

process included the participation of a diverse group of stakeholders or users of the information within a review forum. Participants provided written as well as direct input through structured small group discussion. Outcomes and recommendations of the PAR process are summarized and shared below for each of the three questions reviewed.

### **How do students with disabilities learn challenging academic curricula?**

Recent knowledge from studies about how students with disabilities have learned rigorous standards-based curricula reveal more about why students with disabilities have not been successful than which factors actually have helped them to succeed in learning challenging academic content (Murphy, 1996; Zigmond et. al, 1995). Research has indicated that students with disabilities are negatively effected by traditional instructional practices common to high schools (Gersten, 1998). Instruction organized around chapters in textbooks and limited to teacher lectures, student note-taking, and regurgitation of a collection of disconnected facts has not challenged or accommodated students' diverse learning styles and has been particularly deleterious to students with disabilities (Onosko & Jorgensen, 1997; Darling-Hammond, Aness, & Falk, 1995; Ferguson, 1997). While anecdotal research has supported the use of problem-based learning, constructivist classrooms, and multiple intelligence's theory in the instruction of students with disabilities, it has not been shown which of these or other instructional practices are effective for a wide range of students with disabilities within a variety of secondary school contexts (Sylwester, 1995; Ferguson, 1997; Jorgensen, 1996) and why they do or do not work.

Likewise, emerging research has supported the efficacy of a variety of instructional supports (e.g., curriculum modification strategies, meta-cognitive approaches, learning strategies, graphic organizers and other "thinking maps") for promoting both the participation of students with disabilities in the general education classrooms and their attaining individualized learning

objectives (MacArthur, Schwartz, Graham, Molloy, & Harris, 1996). Yet, how innovative instructional methods and supports effect student skill acquisition has not been conclusively determined. For example, research has shown that students with disabilities can be taught in supportive settings (e.g., resource rooms) to be effective learners (Schumaker & Deshler, 1992) and that the ability to advocate for oneself in any setting is a key indicator of academic success (Dowrick & Skouge, 1999; Schumaker, Hazel, & Pederson, 1988; Van Reusen, Bos, Schumaker, & Deshler 1987; Vernon, Deshler & Schumaker, 1993). Innovative strategies, such as “strategic learning” and “empowerment intervention” have not been given adequate attention or thorough analysis to understand in what contexts and with what kinds of students they are most effective.

Although we know something about the kinds of teaching strategies and supports that promote learning for students with disabilities, sporadic interventions have not resulted in success at average or above-average achievement levels for students with disabilities in general education classrooms (Deshler & Schumaker, 1993; Tralli, Colombo, Deshler, & Schumaker, 1996; Bulgren, Deshler, & Schumaker, 1995). In addition, these practices have not been adequately supported by school districts because they are often seen as experimental (Deshler & Schumaker, 1993; Tralli et al., 1996; Bulgren et al., 1995). It simply has not been determined which teaching strategies and supports are effective, in what school contexts, and with what sorts of students and staff, despite policy makers and practitioners clear need for proven practices (Sylvester, 1995; Jorgensen, 1996). Further, how these strategies are implemented in different communities to effect the learning of challenging academic content by students with disabilities also has not been investigated.

Of particular concern is how such strategies fit within complex secondary schools where teachers have focused on isolated academic content, have had limited time to work with

individual students, and have faced numerous other external challenges on a day to day basis. Research in this area has not investigated the wide range of education and student planning models which identify and address issues concerning participation of regular education teachers in IEP development and documentation (IDEA, 1997). It is not known how or if IEP teams have worked together to a measurable degree of success to ensure that high expectations are maintained and students are given opportunities to develop skills through a wide range of curriculum options, including vocational education, service learning, community work experience, and adult living skills (Hasazi et al., 1999; Johnson, Stodden, Thurlow, Emanuel, Luecking, & Mack, 2001). Mainstream teachers often have been willing to include students with disabilities in content area classes, but have expressed concerns about grading, IEP development, and identifying appropriate learning strategies. Further, general educators have shared a strong desire for targeted training on how to address the individual needs of youth with disabilities (Sebastion and Mathot-Buckner, 1998).

### **How do teachers learn and use effective and efficient standards-based curricula?**

Traditional in-service models for updating and re-training teachers have been characterized by: episodic calendars designed by outside consultants, presentations by speakers unaware of local content, little or no follow-up or support for implementation; and a lack of stakeholder involvement in planning and delivery. Survey results of teachers indicated that teacher education programs often have reflected little commitment to preparing or in-servicing secondary school teachers to work effectively with students who have disabilities (Norman, Caseau, Stefanich, 1998). Darling-Hammond and McLaughlin (1996) have suggested that effective professional development is: (a) experimental and engages teachers in concrete tasks; (b) grounded in inquiry, reflection, and experimentation; (c) collaborative and interactional; (d)

connected to and derived from teachers' work with students: (e) sustained, ongoing, and intensive; and (f) connected to other aspects of school change. This kind of high-quality professional development enhances the professional life of teachers and supports their active involvement in school improvement. Yet, no literature indicates any investigation as to whether or not any schools have established a culture of ongoing reflective inquiry that enhances professional development in the context of promoting high standards for all students, and how they have done it. Further, investigation has not focused on the successful integration of general and special education professional development, the use of critical-friend models (Stodden, 1995), or the application of adult learning theory (McGregor et al, 1998) to the learning of research-based practices within the context of successful school reform.

Key professional development issues also have not been addressed at the local level, such as developing teacher and administrator competencies and motivation in responding to the needs of all students, nor has this been done at the state level by supporting joint professional development for special and general education personnel (McGregor et al, 1998). Teacher education course content has not included alternative instruction and assessment practices that are interactive, authentic, and performance-based for dealing with students with special needs (Fisher, Roach, and Kearns 1998). Spinelli (1998) has called for the reform of pre-service teacher preparation, as increasing numbers of students with diverse needs are included in general education, to include alternative instruction and assessment practices that provide all students with the curricular and program modifications they need. According to Spinelli, teacher preparation course content has not emphasized best practices when dealing with special needs students.

While the literature has shown that teachers learn discrete skills rather quickly, sustained effort or use over time is necessary to effect substantive changes in complex instructional practices (Fullan, 1992). A variety of models have proven effective in supporting sustained use of research-based practices. For example, in a study of the implementation and ongoing use of major reforms in 44 Kentucky schools, Daniel and Stallion (1996) found that the schools with the highest rating of reform indicators used the following professional development models and activities: (a) mentoring or coaching to transfer new skills, (b) regular use of action-research to experiment and refine new practices, (c) professional development activities within the school day, (d) on-site support with reduced workload, (e) local learning networks, and (f) individual professional growth plans that integrated school goals and professional career plans. These findings supported the work of Darling-Hammond & McLaughlin (1996), cited previously.

Though we understand what constitutes effective professional development practices, we also know that most schools have continued to use less effective, traditional models of professional development. The U.S. Office of Educational Research & Improvement (1996) has suggested "the organization of the school, the professional development available to teachers, and the resources provided--influence what happens in them" (OERI Bulletin # 7, Spring, 1996). It has been suggested that research efforts need to focus on refining model personnel preparation approaches (Stodden, 1992, 1995) that seek to integrate school improvement and personnel development outcomes through the use of school/community improvement teams. Further, the efforts have yet to be made to determine how research will contribute to understanding why schools may be resistant to implementing innovative personnel development practices and how this might be changed.

### **How do contextual factors in secondary schools influence teaching and learning?**

The contextual factors operating in high schools have been as influential to the learning success of students with disabilities as classroom practice has been (Waldrup & Giddings, 1996). These contextual factors—school climate, philosophy, organizational structures, use of time, personnel allocation, governance, and accountability systems—either have created a climate where dedicated teachers have been able to practice their craft or one where the efforts of even the most talented educators have been thwarted (Boyd & Hord, 1994; Bell & Gilbert, 1996). Likewise, a host of contextual factors at the district and state levels have effected classroom practice and, by extension, student learning and achievement. These have included teacher certification processes, special education funding policies, and state department support for professional development to enhance reform and inclusion, among others (Meier, 1995).

The existence of a school-wide or whole school philosophy that values the achievement and participation of all students has been shown to be integral to the success of students with disabilities within general educational curricula (Fisher, Sax, Skoglund and Jorgensen, 1997). Further, when the governance structure of a school has been inclusive of *all* personnel, and *all* personnel have been responsible for the learning of *all* students in the school, expectations and learning opportunities for all students have been improved. Yet, efforts to expand our understanding of school governance structures and their effect on how students with disabilities learn academic subjects have not been made.

School structure and class scheduling also have affected the success of students with disabilities studying general education curricula. The typical high school schedule, consisting of 7 or 8 periods, 50 minutes each, has not been conducive to individualized instruction and assessment that actively engages students in an inquiry-based learning process (Cawelti, 1997;

Lee & Smith, 1994). The traditional structure and class schedule also has hindered collaboration between general and special educators when planning curriculum and problem solving. Research regarding alternative scheduling indicates that when schools have converted to a block schedule, discipline problems have been reduced and overall school climate has been enhanced (Jorgensen, Fisher, Sax, & Skoglund, 1997; Malloy, 1997). For some students with disabilities, however, the conversion to a block schedule may have presented challenges in terms of their attention span and ability to digest large amounts of new information at one time.

Researchers have begun to study how teacher-student configurations and school size affect academic achievement of students with disabilities. Small schools or reconfigured schools can confer many benefits, including demonstrated increases in high school completion rates (Oates, Flores, & Weishew, 1997). As the schools have grown in size, some have chosen to transform themselves from large schools into "clusters" of small schools within the same building (Lashway, 1999). In some restructured high schools, a middle school model of "teams," "houses," or "clusters" has been implemented with several general education teachers, other support persons, and special education personnel work with 100 or more students as a "school within a school." This team of teachers and students has the freedom to structure their own instructional schedule and common planning time each day. This model has promoted greater opportunities for interdisciplinary teaching, collaborative curriculum planning, integration of special education teachers into the instructional process, and student-specific problem solving. In a New York study of 34 schools that were divided into "Houses" averaging 250 heterogeneously mixed students each, most house coordinators observed improved attendance, student responsiveness in school, and improvement in grades (Eichenstein, 1994). While this model has heuristic appeal, few studies have examined the effects of this and other nontraditional

teacher/student configurations on student learning across demographically and organizationally diverse schools.

Student ability grouping has been one of the most emotionally charged issues in high school reform today. While research has shown that tracking harms most students academically and socially, these practices have persisted (Oakes, 1985; Wheelock, 1992). For students with disabilities, tracking has had deleterious consequences. Students with disabilities have been over-represented in lower track classes and the existence of tracking in general education has further legitimized separate special education classes. The handing off of students with disabilities to specialists has further limited their opportunities because there has been a focus on “functional” life skills at the cost of more academic curriculum (Malloy, 1997; Skritic, 1991; Winfield & Woodward, 1992; Gajar, Goodman, & McAfee, 1993; Kohler, 1998; McDonnell, Hardman, McDonnell & Keifer-O'Donnell, 1995; Szymanski et al., 1990; Wehman, 1992). Especially detrimental has been tracking into poor quality lower-level mathematics (Gamoran, Porter, Smithson, & White, 1997; Grossman & Stodolsky, 1995; Hallinan, 1996; Loveless, 1994), and lower-level English courses where students never achieve adequate reading and comprehension skills (Dowrick et al., 1999; Murphy, 1996). Evidence suggests that elimination of tracking requires a commitment to involving all stakeholders, the provision of time and support for teachers who are responsible for designing new course sequences, and a commitment to professional development focused on curriculum design and instruction that is effective for heterogeneous groups of students.

Another major issue that has been considered has to do with the culturally and linguistically diverse (CLD) students—including African Americans, Latinos, Asian Americans, Native Americans and many immigrant populations-- who have been over-represented in special

education settings, over-represented in lower track classes, and under-represented in college prep courses (Frazier, 1997). Compared to non-CLD students with disabilities, CLD students with disabilities have been more likely to face higher social, cultural, and language barriers; the negative effects of having grown up in poverty; and difficulty processing oral and written information in systems dominated by Western forms of communication. For CLD students with disabilities, these factors have increased the risks of high school failure and dropping out (Cohen & deBettencourt, 1991).

Gliedman and Roth (1980) cogently argued that persons with disabilities have comprised a minority group whose members, like members of other minorities, are often stereotyped and subjected to negative perceptions and low expectations. From this perspective, many CLD persons with disabilities have faced a double burden of discrimination due to their simultaneous membership in two minority groups (Fine & Asch, 1988). Culturally skewed assessments, as well as educator biases, have been widely considered to underlie the over-representation of many CLD groups in special education (Frazier, 1997; Handy, 1999; Oswald, et al., 1999).

According to Carey, Boscardin, and Fontes (1994), CLD students have often lacked the “goodness of fit” with program testing that they have needed in order to perform well academically; the researchers have pointed to a “basic mismatch between students’ cultures and the school’s culture”. Inappropriate assessments and discrimination have led to students with limited English proficiency and students with disabilities being clustered into low ability tracks and special education classes. Without consideration of their abilities and potential, CLD students have been underrepresented in advanced mathematics and science classes (Sutman, Guzman, & Schwartz, 1993) among other challenging courses. These factors may have

contributed to the outcome of approximately forty percent of CLD students being functionally illiterate (August & Hakuta, 1997), a rate which has been even higher for those with disabilities.

While CLD populations in the United States have been increasing and Caucasian populations have been decreasing (U.S. Department of Education Office of Civil Rights, 1992), the need for classroom environments that address the linguistic and cultural backgrounds of at-risk CLD students has become critical (Sileo, & Prater, 1998). The need to consider how special needs students within various racial groups learn best with specific teaching styles (Trueba, Cheng, & Ima, 1993; Hewett, 1996), and how principles of effective multicultural education can be incorporated into special education teacher training (Banks, 1994, 1996) has not been addressed.

## **Discussion**

Although, much information has been generated over the years about how students with disabilities learn and perform in secondary school settings, we still do not have a clear understanding of how to teach general education academic curricula effectively to students with disabilities. Further, we cannot prove what conditions and settings help students with disabilities learn best. The complex nature of secondary schools makes it especially difficult to meet the individual needs of students with disabilities in order to ensure their academic success. In looking at how students learn, how teachers and schools implement effective practices, and how contextual factors effect teaching and learning, the need to develop a holistic understanding of the problem of poor academic achievement among secondary school students with disabilities is evident.

Given that the participation of students with disabilities within the general education curricula is a relatively new requirement of federal policy (IDEA, 1997), it is difficult to find

consistent practice across school systems. Much of the published research in this area has focused upon the problems and issues of teaching students with disabilities. Instead, it should focus on the need to identify and clarify emerging and exemplary strategies, technologies, supports and accommodations that are most effective in (1) supporting students with disabilities to learn general education academic curricula (2) improving student performance, graduation rates, and successful transition to postsecondary education and employment, and (3) promoting personally satisfactory outcomes for students with disabilities and their family members.

Researchers conducting this review have noted two particularly significant voids in the literature regarding the needs of students with disabilities to achieve rigorous academic standards in secondary schools. First, the literature gives little attention to new technologies that might be used in secondary schools to support student learning or empowerment within instructional situations. Most school principals tend to perceive the inclusion of technology only with regard to professional development and increasing student competency in math and science (Lunenburg & Irby, 1998). Issues of equipment complexity were seen as barriers to assistive technology use, and training and maintenance have been identified as needed supports (McGregor & Pachuski, 1996). Over the past ten years, new technologies and the Internet have opened new worlds of learning for persons with disabilities by facilitating inclusion, motivating students with emotional disturbances and conduct disorder, teaching literacy, supporting mainstreaming for students with hearing impairments, and building communication skills in children with autism (Craver, Burton-Radzley, 1998). There is a need to generate new knowledge concerning how such technologies can further support students with disabilities in learning general education academic curricula in secondary schools, and perhaps more importantly, how schools can anticipate and address costly or time-consuming challenges in working with technologies. Also important is the

potential use of technology to help students with disabilities achieve successful employment outcomes (Radke, 1998); business educators should be included in transition planning to help students with disabilities to use these technologies to enhance their employability (James & Meske, 1998).

Also missing from the literature in this field of study is the “voice of the student”. What do students with disabilities think about learning academic curricula? What are methods of learning that excite them? What supports work for them as they try to learn difficult curricula? What do they think are critical areas in their learning environment that need to be addressed or changed? To what degree can students take an active role in devising and implementing learning strategies? Similarly, research rarely focuses on teachers’ needs and bringing their perspective and active participation to the discussion of why they adopt or do not adopt new research-proven practices. We believe that it is critical that these perspectives be part of any secondary school improvement effort, if activities and outcomes are to be valid and applicable to real-life situations faced by students and teachers every day.

### **Recommended Questions for Further Research**

- How have schools established a culture of ongoing reflective inquiry or a guiding whole-school philosophy? Which of these schools can prove their students with disabilities have increased learning, academic success with standards based curricula, and personal satisfaction as a result of this change? Which of these students have pursued postsecondary education and/or employment thereafter, have they been successful, and why or why not? To what extent can schools be held accountable to their philosophies?
- Which instructional supports, strategies, and planning models, in what school contexts, support or hinder students with disabilities in learning rigorous standards based curricula?

What elements of this research can be generalized to assist students in schools across the country? How can those elements of success which cannot be generalized, be systematically addressed in the wide range of unique school and community settings nationally?

- Which high and low-technology options provided to students with disabilities have proven successful in maximizing independent learning, class participation, increased self-determination, work-based experience, and transition preparation? Which barriers to the implementation of these options have been overcome? How has this been done, and can approaches be tailored to a variety of school sites?
- Which strategies (i.e. targeted teacher training, general and special education collaboration, parent/student self-advocacy and self-direction) regarding Individual Education Programs have proven increased academic success and participation in general education for students with disabilities?
- What do students and families think about the efforts made to improve their educational and employability outcomes? Can students and families be supported to enable them to take active, meaningful roles and to utilize self-direction to achieve improved results? How can this information be used to help researchers develop research-based products?
- How have the known adverse effects of low socio-economic status and cultural linguistic diversity been addressed in schools in regards to improved academic success for students with disabilities? What recommendations can be made to systematically improve the involvement of parents and children of these groups to enable them more self-directed progress towards personally selected goals?
- What professional development approaches are effective with secondary school faculty when supporting diverse learners to achieve high academic standards? Do these methods of

professional development translate to professional development with faculty in postsecondary settings? How can teachers at both levels be encouraged to further their education formally, to collaborate, and to take part in research-to-practice initiatives?

- Have district and state levels of school administration effectively addressed barriers to special needs students' success by enhancing professional development and competency, promoting in-school research (especially involving all stakeholders directly), or addressing motivation and commitment levels of all personnel, families and community stakeholders? Which educational sites can prove improved results through a sustained effort with any of these approaches? What do these sites recommend other schools do?
- To what extent can schools use IDEA funding for special education to benefit students with disabilities and general education students when they are in the same learning environment? Can interpreting and implementing the law in this manner have a positive impact on integration and outcomes for mainstreamed special needs students, as well as for the school and general populations who will have increased involvement with them?
- How do standards-based reform efforts in secondary schools link to access, performance, or completion in postsecondary settings and/or employment? What typifies services and programs at the secondary school level and what is the impact, positive or negative, of these services, supports, or programs upon students with disabilities in postsecondary schools and employment? How can secondary schools extend their role as transition training centers to better support students seeking both postsecondary education and/or employment?
- Are schools resistant to fundamental changes to their systems or are they thwarted in their efforts? Which factors positively and negatively influence their efforts to improve student outcomes? What interim and long-range recommendations can be made to make such

changes desirable and achievable for a variety of schools? How can the impetus for change be generated within the systems that are expected to achieve it, rather than created by researchers and legislators who will not be involved on a personal level?

- To what extent has mandated reform and accountability positively and negatively effected the motivation and success of school students and personnel? Have any schools observed measurable changes in school climate (i.e. students and staff demonstrate more caring, acceptance of responsibility, desire to achieve) or functioning (i.e.increased time or funds for collaboration amongst all stakeholders, sustained improvement efforts) as a result of their directly attempting to achieve the goals set by legislation?
- How has recent federal legislation expanded social awareness, perceptions and acceptance of accessibility and disability issues surrounding youth with disabilities seeking access to postsecondary education, life long learning, and employment? Which sites have experienced positive outcomes and can recommend possible strategies for others?

## **Conclusion**

This review identifies and explores a number of secondary school curricula issues that impact educational performance and outcomes for youth with disabilities, including access to, and participation in, postsecondary education and/or employment. Specifically, three questions are asked: (1) how do high school students with disabilities learn challenging academic content; (2) how do teachers learn and use effective research-based instructional practices to help students with disabilities learn rigorous, standards-based curricula; and (3) how do contextual factors in secondary classrooms and schools influence teaching and learning of challenging academic content? Findings of this review show there is much documentation detailing the exact nature of the issues that surround these questions, but research thus far has provided little information

about why certain issues exist, and more importantly, what can be done to resolve them. Clearly there is a great need for researchers to shift their focus away from extensively explored questions, such as those concerning how we teach students with disabilities, towards the more pertinent questions regarding how we can identify, clarify and generalize the best practices of emerging and proven strategies, technologies and supports. Further, analysis, organization and dissemination of this knowledge, once gained and synthesized, must link specific practices to validated outcomes. In order to do this, the authors of this review believe that it is vital that researchers seek a more holistic understanding of how the myriad of factors surrounding secondary curricula issues interact and impact student outcomes, and that they make a pro-active effort to recruit families and secondary personnel in meaningful roles in their research efforts through such innovations as participatory action teaming.

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