

Documenting Impact of Educational Contexts on Long-Term Outcomes for Students with Significant Disabilities

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Abstract: Follow-up studies of students with significant disabilities consistently indicate poor post-school outcomes. Although existing research indicates that services in inclusive general education contexts can result in positive short-term outcomes for these individuals during their school years, there are few investigations of the lives of adults with significant disabilities who experienced inclusive education over extended periods of time. Considering the lack of longitudinal studies, it currently is difficult to determine whether young adults lead more successful lives relative to employment, residential situations, use of leisure time, and friendships and social networks, as a function of inclusive education. This paper focuses on issues faced when conducting research to document the impact of contexts on long-term outcomes for students with significant disabilities, especially when addressing relative effectiveness of services in inclusive general education contexts and more restrictive contexts. Recommendations for future research and related policy and funding are suggested.

In these times of accountability, when state and federal legislatures are linking both financial support for schools and salaries for teachers and administrators to student outcomes, attention is being turned to the short- and long-term outcomes that are expected for students with disabilities. With increased access to the general curriculum and inclusive general education contexts, students with disabilities are expected to make adequate yearly progress and earn regular diplomas. For students with significant disabilities this trend is resulting in many positive changes (e.g., increased acquisition of general education content; inclusion in district and state accountability measures). It also is raising questions about the desired outcomes of educational services for this group of students, as well as the efficacy of various forms of curriculum content, instructional practices, and instruc-

tional contexts that comprise their educational experiences.

With the passage of the Education for All Handicapped Children Act (1975) the education system was mandated for the first time to provide educational services for students with significant disabilities (Federal Register, 1977). As these mandated services were implemented, schools struggled with articulating the purpose of education for this set of students, as well as the curriculum content and instructional practices that would lead to outcomes that reflected that purpose of education. As described in the literature from that period, schools initially provided services for students with significant disabilities based on the curriculum content provided for students without disabilities who were performing at the same developmental level, demonstrating the same developmental skills and milestones (Williams & Gotts, 1977). For the most part, however, this content was taught in settings that segregated students with significant disabilities from classmates who did not have disabilities and the contexts in which they received instruction (Brown et al., 1978).

Some school districts, however, had opted

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to provide special education services for students with significant disabilities prior to the 1975 mandate. One of those districts began to articulate a purpose of education for this set of students, as well as study the long-term outcomes for their graduates (Van Deventer et al., 1981). The Madison (Wisconsin) Metropolitan Schools stated that the purpose of education for students with significant disabilities was to assist in maximizing their independent functioning in the heterogeneous society of adults without disabilities, including where and how those adults work, live, spend leisure time, and access the community. To determine if their services were meeting this goal, the district studied where their graduates with significant disabilities were spending day time hours. Initially the district found that only 2% of these graduates spent day time hours in a non-sheltered work place, while 98% spent day time hours in a sheltered work place or at home. Since these outcomes did not reflect the district's stated purpose of education for these students, the district changed the curriculum content taught and the instructional practices implemented for their current students with significant disabilities. The changes focused on teaching naturally-occurring (i.e., functional) activities in naturally-occurring contexts (i.e., general education and community contexts) with same-age peers who did not have disabilities. Thus, the district changed both the curriculum content taught and the context in which instruction occurred. After six years of implementing these changes, the district found that 91% of the new graduates spent day time hours in a non-sheltered work place, while only 9% spent day time hours in a sheltered work place or at home. The district concluded that these long-term outcomes more closely reflected their purpose of education for their graduates with significant disabilities, and that long-term student outcomes had improved after these changes in the curriculum content taught and the context in which the students received instruction.

Over the decades, numerous studies have been conducted to determine the long-term outcomes for students with disabilities (Wagner, Blackorby, Cameto, & Newman, 1993; Wagner, Newman, Cameto, Levin, & Garza, 2006). Unfortunately, the methodologies used

for such studies have not provided outcome data specifically related to graduates with significant disabilities. For example, the use of data submitted to the U. S. Office of Education limits analysis to disability classification and percent of time in general education. Since federal disability classifications do not include "significant disabilities" or "severe disabilities," outcomes for students with significant disabilities must be extrapolated from data on the existing categories, using prevalence data. In addition, the studies on long-term outcomes focus heavily on employment. For individuals with significant disabilities who have exited school services, however, the focus must go beyond employment and include overall quality of life, including residential situations, use of leisure time, access to the community, and social networks.

The issues faced when studying longitudinal outcomes for students with significant disabilities are affected further by the call for research in special education to match the rigor of research in non-educational fields, resulting in a delineation of quality indicators for various methodologies (Cook, Landrum, Cook, & Tankersley, 2008; Odom et al., 2005). While describing the need for quality indicators, Odom and his colleagues stated: "Special education research, because of its complexity, may be the hardest of the hardest-to-do science. One feature of special education research that makes it more complex is the variability of the participants" (p. 139). We would argue further that, while this is the case for special education overall, it is even more evident when considering special education for students with significant disabilities. Both the low-incidence of significant disabilities and the numerous combinations of disabilities affecting the students comprising this group add to the complexity of the participants and the individualized services they require. The very nature of these complexities limits the field's ability to use randomized trials, large-*N* studies, and norm-referenced assessments to study the long-term outcomes for students with significant disabilities.

This article has four purposes. First, we discuss social validity and the role of social validation methodology in the study of long-term outcomes for students with significant disabilities. Second, we discuss the extent to which

social validity is evident in research on services in inclusive general education contexts, and on the teaching of social skills in high schools. Third, we discuss the current status of research on inclusive education and post-school outcomes, and the extent to which that research is socially valid in representing long-term outcomes for individuals with significant disabilities in relation to their quality of life, including employment, residential situations, use of leisure time, access to the community, and social networks. Finally, we make recommendations for future research and funding support.

Social Validity and Long-Term Outcomes for Students with Significant Disabilities

Definition and rationale for social validation. The concept of social validity reaches far beyond the field of education. Perceptions of the usefulness and satisfaction with consumer products (e.g., automobiles, home appliances, banking and credit card practices) have been influential in business and manufacturing for years. In the field of medicine, there are controversies as to whether medical practices should be (a) standardized (i.e., quantified) by diagnosis and not altered by a physician's clinical judgment based on patients' characteristics, or (b) tailored by a physician to match the characteristics of individual patients and the contexts in which they live (Groopman, 2010).

The concept of social validity was first introduced in education by Kazdin (1977) and Wolf (1978). In part, it was conceived as a response to early concerns about whether or not instructional practices based on applied behavior analysis, with its emphasis on operationally defined behaviors and methods of influencing the consequences of responses, were too controlling, unethical, or undesirable (Kennedy, 2005). Prior to the 1970s and the development of values such as normalization, many persons with significant disabilities were routinely institutionalized in congregate, segregated, and dehumanizing settings. "Education" largely consisted of meaningless and repetitive activities, such as putting puzzles together, sorting objects, or stuffing envelopes with blank pieces of papers. Research efforts often were focused on demonstrating that these individuals were capable of learning,

Unfortunately, little emphasis was placed on the value and meaningfulness of the skills they were being taught; rather, more emphasis was placed on the assessment of a person's disability than on the person's demonstration of competence as validated by learning new and meaningful skills.

More recently, however, the importance of documenting whether or not a particular educational intervention results in positive outcomes in reading, math, science, social, or employment skills within the context of school and community settings for all students has been recognized. Equally important are the reactions and perceptions of the intervention by persons in these settings. For students with significant disabilities, educational interventions involve teachers, students without disabilities, family members, administrators, and community members. Questions concerning the relevance of instructional content, instructional practices, and short- and long-term outcomes of instruction, as well as consumer satisfaction, are just as controversial today as they have been for decades. Social validation methodology was developed to better understand and interpret the larger social context in which instruction and learning occur. It represents an attempt to address the relevancy, effectiveness, usefulness, and appropriateness of curriculum content, instructional methods, education supports, and outcomes of instruction as perceived by various stakeholders in educational and other applied settings. Kennedy (2005) pointed out that social validity is not objective, precise, or quantifiable; rather it is a subjective concept. Perceptions of educational interventions change, therefore, relative to several variables, such as the priorities of different stakeholders, time, location, and social mores.

Social validity is particularly important when attempting to evaluate the long-term outcomes for students with significant disabilities. For nearly four decades, the dismal outcomes of post-school follow-up studies of students with disabilities, and particularly those with significant disabilities, have indicated low rates of employment, dependence on family members or social welfare, few social contacts, and long periods of inactivity (see National Center on Disability and Social Security Administration, 2000). The results of these stud-

ies raise serious concerns about the social validity of education for these students.

Assessing social validity in education. Three basic approaches have evolved to estimate social validity in education: (a) subjective evaluation, (b) normative comparison, and (c) sustainability of results. Subjective evaluation involves the perceptions of instructional relevancy by some group or groups of stakeholders (Kazdin, 1977; Wolf, 1978). Students, family members, teachers, school administrators, or community members may be asked to rate the importance of instructional goals, methods, and outcomes. The advantage of subjective evaluation is that consumer input is gathered and valued. However, there are at least two disadvantages to this method. First, different sets of stakeholders, as well as individual people, have different perceptions of what is meaningful and relevant at any point in time (e.g., parents' and teachers' priorities for instructional objectives). Second, consumer perceptions of a particular intervention might be unrelated to positive outcomes, particularly long-term outcomes.

Normative comparison, sometimes referred to as social comparison, involves comparing the performance of students with disabilities with some other reference group (e.g., same-age peers without disabilities) (Kazdin, 1977; Van Houten, 1979; Wolf, 1978). Normative comparison is always dependent on social standards. Compare, for example, federal or state mandated standardized age-normed tests versus teacher criteria for individualized student performance within a particular classroom, or differential expectations of employers. Normative comparison is based on criteria within a given context; however, a disadvantage centers on the question of whether or not meeting "average" standards is always advantageous for a particular individual. Using normative comparisons can minimize the appreciation of unique human differences and lead to expectations that all persons should be held to the same standard. Finally, questions linger as to what exactly would constitute an appropriate reference group for students with significant disabilities.

Sustainability of results refers to the question of whether or not the outcomes of instruction are maintained over time (Kennedy, 2002). This approach to social validation is

extremely important as we attempt to document the long-term efficacy of education in inclusive general education contexts. Clearly, studies have documented the short-term effects of services in inclusive general education contexts (e.g., Alper & Ryndak, 1992; Fisher & Ryndak, 2001; Ryndak & Fisher, 2003). The disadvantage is that many behavioral changes are not maintained without sustained intervention. A host of intervening variables (e.g., different teachers, individual student characteristics, changing local standards, inconsistent support services) exacerbate the methodological difficulties of relating services in inclusive general education contexts to post-school outcomes for persons with significant disabilities (Ryndak, Ward, Alper, Montgomery, & Storch, 2010).

Failure to apply social validation methodology. We argue that one factor contributing to the poor post-school outcomes characteristic of many adults with significant disabilities is the failure of special education policy makers and researchers to socially validate the prevailing high school curricula, instructional strategies, and service delivery models with respect to long-term outcomes. Studies indicate that those who have the most at stake with respect to the post-school outcomes of secondary curricula (e.g., parents, students, employers) often have little or no input into the curriculum goals, instructional procedures, and outcomes that comprise the content and delivery of high school programs for this population (e.g., Kolb & Hanley-Maxwell, 2003). Unless systems change agents systematically apply social validation methodology and solicit the views of participants most directly involved in the transition from school to adult life, and incorporate their perspectives into programmatic decisions, secondary curricula likely will fail to effectively address the participants' long-term values, goals, and needs.

To illustrate, employment and follow-up studies have indicated since the 1980s that the primary cause of people with disabilities lose their jobs is not because they cannot perform required tasks, but because of difficulty fitting in socially in the workplace (e.g., Brickey, Campbell, & Browning, 1985; Butterworth & Strauch, 1994; Chadsey, 2007; Greenspan & Shoultz, 1981; Kochany & Keller, 1981; Wehman, Hill, Goodall, Cleveland, & Pentecost,

1982). Social validation studies conducted in employment settings indicate that employers of people with disabilities have expectations for their employees on the job (e.g., interacting with co-workers at breaks, requesting and providing assistance, responding appropriately to constructive criticism) and that little tolerance exists for behaviors such as yelling, complaining, assaulting others, invading privacy, or interrupting meetings unannounced (e.g., Agran, Salzberg, & Martella, 1991; McConaughy, Stowitschek, Salzberg, & Peatross, 1989; Salzberg, Agran, & Lignurgaris/Kraft, 1986). At the same time, employers do not believe it is their job to teach expected social skills; rather, employers typically hold that employees with or without disabilities should enter employment with “job-ready” social skill repertoires so supervisors can focus on training requisite skills to maximize job performance (Butterworth & Strauch, 1994). We argue that if employers’ perspectives were heeded, a critical component of secondary programs for students with significant disabilities would be teaching socially validated social skills. However, doing so does not appear to be the case. For example, Guy, Sitlington, Larsen, and Frank’s (2009) statewide study revealed that employment training, in general, is limited in secondary education programs. Even when employment training is implemented, its main focus is teaching technical skills versus job-related social skills.

Social Validity of Inclusive Education and Teaching Social Skills in High Schools

Inclusive education in secondary general education classes and post-school outcomes. Research indicates that receiving services in inclusive secondary general education classes and demonstrating accepted social skills relate to post-school employment success for students with significant disabilities (e.g., Baer et al., 2003; Benz, Yovanoff, & Doren, 1997; Blackorby, Hancock, & Siegel, 1993; Heal & Rusch, 1995; Test et al., 2009; White & Weiner, 2004). A fundamental argument supporting the inclusion of high school students with significant disabilities in general education classes is that these students need access to their general education peers as models of expected social behavior (e.g., Alwell & Cobb, 2009; Naraian,

2010). Being educated in separate, segregated settings restricts opportunities to develop relationships and learn social skills needed for everyday life in school and adult life. On the other hand, interacting with their general education peers can promote acquisition of social skills when peers serve as models of expected behavior (e.g., Hughes et al., 2000).

The logical place to teach social skills valued on the job and in adult life is in a student’s high school environment where an abundance of peers is found, who are competent in performing everyday social interactions. Indeed, studies show that general education peers can be effective teachers of appropriate social skills for students with significant disabilities, and that these skills can generalize to individuals and settings not associated with instruction (e.g., Hughes et al., 2004; Hughes et al., 2000; Hunt, Alwell, Goetz, & Sailor, 1990). Rather than wait until students are in a post-school employment setting, researchers, employers, parents, and others argue that social skills instruction should be provided in secondary curricula for students with intellectual and related disabilities (Kolb & Hanley-Maxwell, 2003). Considering that limited social skills is a characteristic of many students with intellectual disabilities (The AAIDD Ad Hoc Committee on Terminology and Classification, 2010), high schools must be responsible for teaching social skills to students with significant disabilities who have not yet acquired these critical skills. The fact that social skills instruction with peers is not occurring regularly in high school on a regular basis (Carter & Hughes, 2007) is a blatant failure to apply social validation methodology to the secondary curriculum in relation to long-term outcomes of students with significant disabilities.

Social validation of teaching social skills: Parents’ perspectives. As discussed earlier, one method of social validation (i.e., subjective evaluation) includes querying stakeholders about their goals and expected short- and long-term outcomes for a proposed or ongoing program. Particularly as youth get closer to exiting school, there is a growing concern among parents to have their children learn social skills needed to get along on the job and in the community. Their collective concerns are an example of social validation: par-

ents are saying that social skills are critical to success in adult society (e.g., Hughes, Brigham, & Cosgriff, 2010; Hughes, Killian, & Fischer, 1996). Parents report (a) wanting their high school-age children to learn to fit in socially by learning critical social skills, and (b) believing that classmates without disabilities can teach their children these skills (Hughes et al.).

For example, upon hearing that his son could participate in a peer mentoring program at his high school, one father said, "It's about time—we've needed this for so long." He expressed how critical it was for his son to learn what is and is not appropriate behavior, both to promote relationships with peers and to learn what was expected on the job. One mother expressed concerns that her son was close to exiting high school but lacked socially appropriate skills required in the work place. She indicated that, "What we need now more than anything is social skills," and that this was her top priority for her son's participation in the peer mentoring program. She followed up by saying that society wants students to go on to be "card-carrying, tax-paying citizens" and in order to do so, it was critical that her son learn the social behaviors expected in adult life while he was still in high school.

Despite parents' strong views on the value of incorporating social skills instruction into the school day for their children with significant disabilities, rarely is their input sought on the content of secondary curricula and instructional activities (Kolb & Hanley-Maxwell, 2003). Further, unless instruction on social skills occurs, there is little likelihood that schools will provide the social interaction and opportunities to learn social skills that parents value, even when their children with significant disabilities have access to general education classmates (e.g., Carter, Hughes, Guth, & Copeland, 2005; Hughes, Carter, Hughes, Bradford, & Copeland, 2002). Unfortunately, observational studies show that instruction on social skills rarely occurs in general education high school contexts (Carter et al.), suggesting that parents' perspectives and goals are not being incorporated into identifying relevant secondary curriculum content.

Applying social validation methodology to high school curriculum. Parents, employers, and researchers are calling for opportunities for stu-

dents with significant disabilities to learn the social skills needed for employment and other aspects of adult life from their classmates without disabilities while in high school. For this to occur, secondary curricula should be preparing students with significant disabilities for employment and other aspects of adult life. We argue that support should be provided by funding agencies (e.g., Institute of Education Sciences) to systematically conduct social validation research investigating the perspectives of critical stakeholders toward instruction on social interaction, and that these views be considered when identifying the secondary curriculum content for students with significant disabilities.

Underutilization of social validity in educational research. The underutilization of social validity in educational research is related to the overarching questions of the purpose of education. In general education for students without disabilities, controversy exists over the desired outcomes of education. Should the goal of education be to develop well-rounded educated individuals with a broad base of knowledge, or to focus on job readiness for the global economy? Similar questions have been raised as to the purpose of inclusion in general education contexts. Should the primary emphasis of inclusion be the development of social skills and friendships, or should the emphasis be broadened to include readiness to work, live, and participate in the community? Our position is that both emphases are crucial. Incorporating the development of social skills and friendships into the purpose of education in general education contexts for students with significant disabilities need not jeopardize their development of skills needed for employment and living in the community. Unfortunately, disagreement on these questions compounds efforts to assess social validity.

Finally, not all special education researchers are focused on the long-term goals of improving quality of life after school years. Many scholars, understandably, emphasize effective ways for students with disabilities to meet state standards for grade-level performance in math, reading, and science related to provisions of the No Child Left Behind Act. Few researchers have addressed the social validity

of inclusion in general education contexts relative to post-school outcomes.

Current Status of Research on Services in Inclusive Contexts and Post-School Outcomes

While research examining inclusive education for students with significant disabilities has significantly increased over the last decade (Halvorsen & Neary, 2009; Ryndak & Alper, 2003), the primary dependent variables used in the majority of the research studies have focused on short-term social and educational outcomes. For example, in a research review on promoting social interactions between students with significant disabilities and their peers without disabilities, Carter and Hughes (2007) concluded that creating common social and educational experiences between students with and without disabilities results in increased acceptance of students with significant disabilities, increased frequency and quality of social interactions between peers, and the development of friendships during and after school hours (Carter & Hughes). However, they also point out that “In most research studies, the long-term effects of interventions have not been evaluated, highlighting the need for longitudinal evaluations that extend over the course of multiple semesters or school years” (p. 321).

Similarly, Hunt and McDonnell (2007) examined research on strategies for supporting effective instruction to students with significant disabilities in general education classes. They concluded that a number of student- and classroom-based interventions have proven to be effective in promoting students’ acquisition of a variety of academic and functional skills. They also noted that a pervasive weakness in this research literature was a lack of attention by researchers to the generalization of skills to day-to-day activities, the maintenance of skills across time, and the long-term impacts on students’ overall quality of life.

The intervention literature clearly documents that, as a field, we have effective strategies for increasing immediate social and educational outcomes for students with significant disabilities in general education classes. The assumption is that students’ participation in general education classes, and their improved

social and education performance in these contexts, will lead to better outcomes and enhanced quality of life after they exit school. Unfortunately, the nature of the intervention studies completed to date simply do not yet allow for this conclusion.

Some evidence supporting the long-term benefits of inclusive education can be found in studies that have examined the status of students after they leave school (Benz, Lindstrom, & Yovanoff, 2000; Benz et al., 1997; Heal, Khoju, & Rusch, 1997; Ryndak, Ward, Alper, Montgomery, & Storch, 2010; Ryndak, Ward, Alper, Storch, & Montgomery, 2010; Wagner et al., 1993; Wagner et al., 2006; White & Weiner, 2004). For example, White and Weiner conducted a correlational study examining the relationship between educational placement and community-based instruction on employment outcomes for 104 young adults with significant disabilities. One of the strongest predictors of paid, community employment for these students following school was the degree to which they were included in general education contexts with age-appropriate peers prior to graduation.

In a retrospective qualitative study, Ryndak, Ward, Alper, Montgomery, and Storch (2010) examined the impact of inclusive education on two individuals with severe significant disabilities who attended the same self-contained class when they were 15 years of age. Data sources included: (a) observations at age 15 and 25; (b) interviews with the individuals with significant disabilities, family members, friends, and adult service providers; and (c) educational and adult services records. One of these individuals was identified as the “highest functioning” student in their class and the other was identified as the “lowest functioning” student. In subsequent school years the “highest functioning” student remained in self-contained classes while the “lowest functioning” student received services in general education classes. Three years after exiting the educational system the “lowest functioning” student consistently had been employed as a judicial system government employee, living in an apartment with weekly support for budgeting and independent functioning, and participating within an extensive social support network. In contrast, the “highest functioning” student had lost numerous jobs and

at the time was working at a sheltered workshop, was living with family members, and had no social support network beyond family members.

Finally, the National Longitudinal Transition Study (NLTS) I and the National Longitudinal Transition Study (NLTS) II funded by the U. S. Department of Education have also attempted to identify educational and school factors that influence post-school outcomes for students with disabilities. Findings from these studies also suggest that taking courses in the general education curriculum, especially vocational education courses, has a positive impact on students' post-school outcomes (Wagner et al., 1993; Wagner et al, 2006).

Although the available evidence suggests that inclusive education has a positive impact on post-school outcomes, most of the published research studies on post-school outcomes were not designed to specifically examine the relationship between students' participation in general education classes and the general education curriculum, and their quality of life following school. Some of the limitations of the existing studies include:

- The primary dependent variables of post-school adjustment are overly focused on employment outcomes. Data on variables linked to individuals' levels of independence, self-determination, community participation, depth and breadth of social networks, and overall satisfaction with quality of life are essentially nonexistent.
- Measures of the characteristics of services in inclusive general education contexts are broad (i.e., number of general education courses taken, amount of time in general education classes) and do not address the range, intensity, or quality of instruction that students receive in these contexts.
- The measures of academic performance and social connectedness are weak if they exist at all.
- Measures of student and family characteristics are broad and often don't address variables that might influence student performance during school or access to resources after school (e.g., family income).
- The impacts of community characteristics (i.e., rural vs. urban; levels of unemploy-

ment; affordable housing) are frequently not controlled for when drawing conclusions about students' post-school outcomes.

- The type, intensity, and quality of community services and supports available to graduates are rarely controlled for when drawing conclusions about post-school outcomes.
- Measures of school and post-school experiences often are based on student and parent reports, or analysis of school or agency records, rather than direct observation.
- The number of students with significant disabilities, especially those with more significant disabilities, represents a small portion of the sample which prevents a comprehensive analysis of the features of students' educational experiences that might impact post-school outcomes.

What these limitations point out is that addressing the question of how inclusive education, and students' access and progress in the general education curriculum, impact their post-school outcomes will require the implementation of one or more national longitudinal studies that systematically track the breadth, intensity, and quality of the participation of students with intellectual and developmental disabilities in general education classes and the general education curriculum throughout their school years and into adulthood.

Discussion

We have addressed some of the methodological issues in documenting post-school outcomes for students with significant disabilities. Specifically, we focused on the importance of social validity, the need for more emphasis during high school on social skills related to employment and other long-term outcomes, and the need for longitudinal studies focused on young adults with significant disabilities. Based on our review of the literature, the following recommendations for practitioners and researchers are offered.

Recommendations for Increasing Emphasis on Social Validity

First, there is a need for more consumer input during the school years about curriculum goals. Too often, general and special educa-

tors, parents, and school administrators disagree. These issues are exacerbated by legislative mandates and the economy. Many times, issues involving post-school outcomes are simply not addressed until shortly before or after exiting school. In addition, there is a need for more student input into their own educational program based on their desires for the future. There is a great need to encourage teachers, students, family members, administrators, and researchers to think ahead and consider options for post-school options.

Second, implications for teacher preparation should be reconsidered. General education teachers need to be better trained to adapt and accommodate curriculum for students with disabilities and recognize that not all students can or should meet the same performance criteria. Many higher education faculty in elementary and secondary general education are more focused on curriculum content of academic subjects rather than meeting individual needs of diverse learners. Most states mandate only a two to three credit hour course in meeting the needs of diverse learners for general education teacher licensure, and many of these courses focus primarily on students with mild disabilities. Unfortunately, student teachers all too often are trained in non-inclusive settings with little or no contact with students with significant disabilities.

Ryndak and Alper (2003) developed a model for determining relevant curriculum content for a student with significant disabilities that blends relevant general education content and functional content. The primary advantage of this model is that it enables students with significant disabilities to remain in general education contexts and have access to the general curriculum while, at the same time, receive instruction that facilitates participation, as independently as possible, in context-based activities (e.g., in school, on the job, in other aspects of adult life in the community). This model relies on collaboration between special and general educators, as well as the students, their family members, and their social support network.

Third, mastering the technical and social skills needed for successful post-school outcomes for students with significant disabilities is, in part, contingent on the context of in-

struction. Instruction in the natural contexts in which skills typically are used is a priority in the education of secondary students with significant disabilities. Currently there are two variables that impact the instructional contexts for these students. First, many researchers, schools, and parents differentiate the context for instruction based on a student's age; that is, through the age of 18 many students with significant disabilities receive instruction in the same contexts as their same-age peers who do not have disabilities. Thus, if there is a community-based employment training program for general education students in a high school, a student with significant disabilities might receive instruction on employment skills with those general education students in the same employment contexts. When general education students exit school services at age 18, students with significant disabilities would either receive community-based services (i.e., on the job, in residential situations, in the community-at-large) through age 22, or attend post-secondary education programs on university or college campuses.

In contrast, some researchers, schools, and parents differentiate the context for instruction based on the curriculum content they choose for the student to learn. For instance, the emphasis of NCLB on meeting general education academic standards might result in maximizing students' participation in academic contexts with their same-age peers in both secondary and post-secondary settings; emphasis on transitioning to adult life in the community might result in maximizing a student's participation in community-based contexts (e.g., employment sites, residential situations). John Dewey held that a child is best prepared for life as an adult by being allowed to blend what is learned in school with life outside of school and experiencing that which has meaning in his/her life. The dilemma facing schools today is focusing on the individualized needs and future goals of a student with significant disabilities, and maximizing their educational experiences related to both general education content and their functional needs. Additionally, the education system must struggle with the concept that the effectiveness of education services for all students will not necessarily be based solely on standardized state and district assessments.

Need for Longitudinal Studies

Design and implementation of a comprehensive longitudinal study for students with significant disabilities would require a significant financial investment by the federal government and the participation of researchers from a number of disciplines. This effort would face a number of methodological challenges including obtaining a national representative sample; defining and quantifying the critical dimensions of education in inclusive general education contexts; obtaining reliable and valid measures of student learning and social adjustment during school; defining and quantifying meaningful post-school outcomes; and controlling for variation in school-based and post-school services. However, such an endeavor could have significant benefits in informing educational policy for this group of students for years to come.

Given the current state of research on the impact of services in inclusive general education contexts, as well as the mandates in NCLB (2001) and IDEA (2004) on students' access to and progress in the general curriculum, it would seem prudent to ascertain what elements of students' participation in the general curriculum directly impacts their post-school outcomes. We need to know whether learning content from the general curriculum, learning social and functional skills that are linked directly to students' post-school contexts and outcomes, participating in general education classes and activities, or all three make a difference in the effectiveness of students' educational programs. We also need to know whether holding schools accountable only for short-term learning and social outcomes is having the intended impacts. We might find that if we really want to improve the quality of education for students with significant disabilities, then schools should instead be held responsible for whether students successfully transition into post-secondary education or employment, and participate fully in the social and cultural networks of the community.

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