CRITICAL ISSUES IN SPECIAL EDUCATION

Access, Diversity, and Accountability

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INSTRUCTIONAL INTERVENTIONS FOR STUDENTS WITH LEARNING DISABILITIES

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The goal of instructional interventions, approaches designed to increase student engagement in learning and to ameliorate learning difficulties, is to maximize learning outcomes for students with disabilities. In the thirty years since learning disabilities were first identified, researchers and leaders in the field have been developing, researching, and refining interventions that enhance learning opportunities for students with learning disabilities. Recently, two meta-analyses (Swanson, 1999; Swanson & Hoskyn, 1998) and a synthesis (Vaughn, Gersten, & Chard, 2000) have provided summaries of intervention research and identified effective instructional practices. Among the practices found to be effective are explicit instruction in skill building and the development of strategies in students' areas of academic need, reading, mathematics, and/or writing, provided in small groups. This approach to instruction provides the intensity and explicitness needed by students with learning disabilities (Swanson, 1999; Swanson & Hoskyn, 1998; Vaughn, Gersten, & Chard, 2000).

If all we had to contend with were developing, researching, and implementing effective practices, then our job would be easy. But the classrooms, schools, and communities in which instruction is provided to students at risk for and identified with disabilities are much more complex. Changes in the last few years include changes in the law, an increased awareness that not all students are benefiting from instruction, and an increase in the number of students from culturally and linguistically diverse backgrounds in schools. To ensure that practiees are appropriate and effective for all students regardless of setting, we must reevaluate what we know about teaching and learning and continually strive to improve practice. One area in particular, the recent mandate to ensure that students with disabilities have access to and make progress in the general education curriculum (Individuals with Disabilities Education Act, 1997), has led to discussions and research of effective instructional practices provided to students with learning disabilities in the general education classroom. In addition, due to the importance of identifying difficulties early, prevention has become a critical part of instruction. In this chapter I discuss the use of prevention and intervention practices in the general educa-

tion classroom and then look at two groups of students about whom we need to learn more, students who make minimal gains even when provided supplemental instruction and students from diverse backgrounds. In particular I consider the following questions: How do we ensure that students with disabilities have access to the general education curriculum? What type of instructional intervention do students who fail to respond to treatment need? Are current interventions responsive to the needs of students with disabilities who are from culturally and linguistically diverse backgrounds?

ENSURING ACCESS AND MEASURING PROGRESS

How do we ensure that students with disabilities have access to and make progress in the general education curriculum? The Individuals with Disabilities Education Act of 1997 mandated that students with disabilities be given access to the general education curriculum and that accommodations and adjustments that enable the students to be involved in and progress in the general education curriculum be part of students' individualized education plans. It gave students with disabilities the opportunity to receive the same curricular content as their peers without disabilities.

To improve learning for students with mild to moderate disabilities and students at risk for school failure in the general education classroom, King-Sears (2001) suggests the following three steps. First, analyze the general education curriculum to identify accessible resources and universal design features in the curriculum. Second, enhance areas of the general education curriculum as needed. Third, identify and implement minor to major modifications needed so students with disabilities can access the curriculum. In the following sections I discuss the accessibility of texts, means for enhancing general education, and a way to implement minor to major modifications in the general education classroom.

General Education Resources

Among the roadblocks to students' participation in the general education curriculum is the inaccessibility of the materials used in the general education classroom. These materials often lack the instructional design features that support the learning of students with disabilities. Although limited, reviews of basal programs and textbooks indicate that texts are generally not accessible to students with disabilities. This is particularly troubling in the content areas because textbooks often define the curriculum. At the secondary level, the match between student ability and readability of and accessibility to textbooks is critical. Reviews of history (Harniss, Dickson, Kinder, & Hollenbeck, 2001) and geography (Jitendra, Nolet, Xin, Gomez, Renouf, Iskod, & DaCosta, 2001) textbooks found that texts were limited in several ways. The text structure was often unorganized and lacked coherence (Harniss et al., 2001). The readability levels were often higher than that of the students for whom the text was intended (Harniss et al., 2001; Jitendra et al., 2001). Finally, they relied on factual information rather than on presenting the concepts and principles necessary for deeper understanding of the material (Harniss et al., 2001; Jitendra et al., 2001).

At the elementary level, Jitendra, Salmento, and Haydt (1999) reviewed seven basal mathematics programs for the inclusion of nine variables: clarity of objective, additional concepts and skills taught, explicit teaching explanations, teaching prerequisite skills, efficient use of instructional time, sufficient and appropriate teaching samples, adequate practice, ap-

propriate review, and effective feedback. None of the programs evaluated met all nine criteria, and only two met seven or eight. Likewise, Smith et al. (2001) analyzed the phonological awareness component of four kindergarten reading programs and found that the programs lacked instructional design principles that would make them accessible to students with disabilities, such as systematically sequencing tasks, increasing opportunities to produce sounds at the phoneme level, and providing suggestions for teacher scaffolding of tasks and materials. An examination of writing process instruction in two basal programs by Gleason and Isaacson (2001) revealed that the programs did not provide information on explicit instruction of procedural strategies, reviews of concepts and skills learned, more than one opportunity to practice the genre, or suggestions for teacher modeling and scaffolding of tasks.

Inconsiderate and inaccessible texts require that teachers "fill in" the missing material and support needed by students with disabilities. Recommendations for teachers across the reviews include adding modeling and explicit instruction (Gleason & Isaacson, 2001; Smith et al., 2001), providing scaffolds (Gleason & Isaacson, 2001; Harniss et al., 2001; Smith et al., 2001), developing background knowledge (Harniss et al., 2001), and developing concepts (Harniss et al., 2001; Jitendra et al., 2001).

Enhancing the General Education Curriculum

If we view prevention and intervention as a continuum, rather than as discreet instructional categories as Keogh (1994) suggested, then the instruction provided early to students experiencing difficulties and that provided later to students with disabilities are two sides of the same coin. The basic concepts and foundational skills taught in each academic area are the same whether used as a prevention measure or an intervention; the difference is the level of intensity with which instruction is provided (Foorman & Torgesen, 2001). While this knowledge base is most developed for reading (Stanovich, 1999), we have an emerging knowledge base in mathematics and writing that permits the development of effective interventions. Kame'enui and Carnine (1998) describe the fundamental concepts and principles needed for the most efficient and broadest acquisition of knowledge within an academic area as "big ideas." Big ideas in reading are phonemic awareness, alphabetic principle and phonics, fluency, vocabulary, and the construction of meaning (Coyne, Kame'enui, & Simmons, 2001; Snow, Burns, & Griffin, 1998). The big ideas in mathematics may include number sense and estimation, spatial sense and geometric thinking, computational proficiency, patterns and relationships, and problem solving (Cawley, Parmar, Foley, Salmon, & Roy, 2001; Thorton, Langrall, & Jones, 1997). Big ideas in writing might include steps in the writing process, knowledge of the conventions of a writing genre, mechanics, functions of writing, spelling, and handwriting (Graham, Harris, & Larsen, 2001).

Furthermore, since instructional practices associated with effective outcomes for students with disabilities enhance learning outcomes for many students (Vaughn et al., 2000), practices used by special educators are finding new life in general education classrooms as prevention and intervention measures. Research on effective instructional interventions for students with learning disabilities has had an impact on both general and special education.

Prevention

The knowledge that intervening early with students who are experiencing difficulty in reading (Dickson & Bursuck, 1999; Juel, 1988; O'Connor, 2000), mathematics (Fuchs & Fuchs,

2001), and written expression (Graham et al., 2001) increases students' chances for academic success has provided the impetus to develop interventions that prevent or ameliorate learning difficulties. Instruction intended as a prevention measure is usually provided to the whole class as part of the curriculum and may only require enhancing the existing curriculum slightly. The goal is to provide students opportunities to practice and master foundational skills and concepts in the context of general education as early as possible. Fuchs and Fuchs (2001) identified three criteria for identifying appropriate prevention practices. They include those that (1) have demonstrated effectiveness, (2) are research-based, and (3) contain universal design features. In this case *universal design* refers to features or elements of instruction that support the acquisition of skills for students with disabilities and are suitable for students without disabilities (Fuchs & Fuchs, 2001; King-Sears, 2001).

Research in early intervention is promising. O'Connor (2000) found that providing whole-class, teacher-led instruction in phonological awareness to kindergarten students was effective in moving 25 percent of the students identified for possible difficulty out of the risk category. In a similar study Dickson and Bursuck (1999) found that when teachers enhanced phonological awareness and phonics instruction, the number of students who remained at risk was reduced. Graham, Harris, and Larsen (2001) reported on four studies that examined the efficacy of early intervention in writing and found that early intervention in handwriting and spelling have a positive effect on composition fluency and quality of writing. While instruction in these studies was supplemental, the aim was to accelerate the progress of struggling writers.

Fuchs and Fuchs (2001) took another approach to preventing mathematics difficulties. In their model, in addition to teacher-led instruction, all students participated in follow-up instructional activities. Peer-assisted learning strategies (PALS) were used to integrate principles of mathematics prevention into the general education classroom. These principles involve providing instruction that is based on achievement standards, is quick-paced and varied, and includes cognitive strategy instruction and physical and visual representations. Classroom teachers incorporated two thirty-five-minute sessions into their regular mathematics instruction. During each session, students working in pairs each had the opportunity to be both a tutor and a tutee on a particular skill. In addition the model includes mediated verbal rehearsal, step-by-step feedback, explanation and modeling of strategic behavior, frequent verbal and written interactions, and opportunities for tutees to apply explanations to subsequent problems (Fuchs & Fuchs, 2001), thus incorporating features of effective instruction into the model.

Prevention as it is described here goes a step beyond prereferral interventions. Rather than a teacher's waiting for a student to experience diffieulty and then providing one-on-one support in response, prevention models are proactive. They enhance the learning environment for all learners by incorporating effective instructional practices that meet the definition of universal design in an effort to prevent the development of learning difficulties for some students.

Intervention

Identifying foundational skills and concepts students need has provided the knowledge base for identifying students at risk for learning difficulties early. However, prevention measures are not enough for many students (O'Connor, 2000; Torgesen, 2000; Vellutino, Scanlon, & Lyon,

2000). While the overall concepts and skills that are taught do not change, the content of lessons will be based on the specific needs of the students (Fuchs & Fuchs, 2001; Graham et al., 2001), and instruction will be more intensive and explicit. Two ways to intensify instruction are to increase instructional time and to reduce the group size in which instruction is provided (Foorman & Torgesen, 2001). Intensifying instruction gives students opportunities for higher rates of active participation, more individualized scaffolding, and corrective feedback. Explicit instruction makes visible for students with disabilities the processes effective learners use. To teach these processes or strategies, identify and model the use of skills students need to use as well as the strategies themselves, give students multiple opportunities to demonstrate the use of the skills in isolation and as part of the strategy, ask them to explain how and why they use the strategy, and provide feedback (Fuchs & Fuchs, 2001; Gersten, 1998).

Other design principles associated with effective instruction are aligning task difficulty and student level (Vaughn et al., 2000), using follow-up instruction to ensure mastery of targeted skills (Coyne et al., 2001; Fuchs & Fuchs, 2001; Graham et al., 2001), providing access to the lower-level skills students need to use higher-level skills (Vaughn et al., 2000), and ensuring opportunities for students to self-regulate learning (Fuchs & Fuchs, 2001; Graham et al., 2001). These principles are necessary to providing the support students with disabilities need to acquire complex knowledge and skills in mathematics (Fuchs & Fuchs, 2001; Parmar, Cawley, & Frazita, 1996), reading (Coyne et al., 2001; Vadasy, Jenkins, & Pool, 2000), and writing (de la Paz & Graham, 1997). Appropriate instruction supports students' development of basic skills as well as complex thinking, learning, and achievement (Gersten, 1998).

One of the goals of prevention and intervention is to ensure that students with learning disabilities have access to the general curriculum. We can ensure the meaningful participation of students with disabilities by increasing the capacity of general education (Zigmond et al., 1995) to accommodate student diversity; we can do this by using prevention and intervention practices that incorporate features of effective instruction, such as giving corrective feedback, grouping students for instruction, and providing multiple opportunities for students to respond. Instruction that includes these features provides students with disabilities opportunities to acquire basic skills and gives them access to the complex concepts, skills, and problem-solving strategies that most students need (Gersten, 1998).

Implementation of Change in the General Education Classroom

One way to implement change in the general education classroom is to provide instruction that can be modified and adapted at each level. Using curriculum-based measures to monitor student progress in acquiring the necessary skills and concepts gives teachers a way to identify students requiring more intensive instruction and to monitor their progress; it also enables teachers to provide additional support to students with disabilities.

Several models of layered instruction have been developed and implemented; teachers have used these to provide additional instruction to students in primary grades struggling with reading (Dickson & Bursuck, 1999; O'Connor, 2000) and mathematics (Fuchs & Fuchs, 2001). The first layer consists of effective practices, such as delivering systematic and explicit instruction, using flexible grouping, and providing multiple practice opportunities. The teacher increases support for students who are lagging behind (Dickson & Bursuck, 1999; Fuchs & Fuchs, 2001; O'Connor, 2000). The degree of intensity, explicitness, and teacher support var-

ies according to the students' skills and diverse learning needs (Dickson & Bursuck, 1999). By providing different levels of instruction, teachers can give students who are experiencing difficulty multiple opportunities to learn and practice new skills and concepts.

O'Connor used layered or leveled instruction to reduce early reading failure by providing instruction across four levels that varied in length (number of minutes per session), intensity (number of times per week and group size), and duration (number of weeks). Level 1, prevention, consisted of ninety whole-class, teacher-led sessions of phonological awareness activities. In level 2, students received one-on-one instruction that reinforced the activities in level 1. Students in level 2 received twelve-minute sessions, three times a week for ten weeks. Level 3 targeted first-grade students and began in November. Students in this level received thirty-minute sessions four times a week for fourteen weeks in groups of three or four. Students in the project moved in and out of supplemental instruction for two years (kindergarten through first grade) on the basis of their scores on progress monitoring measures. At the end of first grade, reading failure among the at-risk students had declined. However, the proportion of students referred for special education services did not decrease. Dickson and Bursuck (1999) implemented a three-tiered system that varied along the same dimensions studied by O'Connor. Students at risk for reading failure benefited the most when they were placed in small-group intensive intervention. Both O'Connor (2000) and Dickson and Bursuck (1999) attributed the failure to decrease referrals to special education to teachers' lack of time and resources and their resulting inability to provide the intensity of instruction struggling readers needed.

Fuchs and Fuchs (2001) designed three levels for math instruction. The first level, prevention, focused on principles that met the criteria for universal design, was research based, and was proven to be effective. Instruction was integrated into the general education curriculum through PALS along with the regular mathematics curriculum. For the second level, prereferral, the general education curriculum was modified in ways that were feasible for the teacher, minimally invasive for the target student, and unobtrusive for other students. Goal setting, self-monitoring of task completion and work quality, computer-assisted instruction, and concrete representations of numbers and number concepts were incorporated into the first level of instruction. Finally, the third level of instruction, intervention, was provided to students who did not respond adequately to the first two levels. In the third level, instruction focused on the individual student and included intensive instructional delivery and explicit contextualization of skills-based instruction.

Coyne, Kame'enui, and Simmons (2001) developed and implemented a schoolwide model of prevention and intervention in beginning reading instruction. Staff at participating schools coordinated with the researchers to establish reading benchmarks, devise a method for identifying and monitoring students struggling with reading, and develop differentiated instruction for students with a wide range of reading abilities and skills. Instruction was based on six instructional design principles: big ideas, mediated scaffolding, conspicuous strategies, strategic integration, primed background knowledge, and judicious review. While there were no predetermined levels of instruction beyond the standard curriculum, collaborative teams within each school made decisions about the allocation of instructional time, the use of supplemental materials, and instructional focus to meet the needs of individual students.

These three studies have several factors in common. First, they all track student progress through progress monitoring. Second, the first level consists of the regular curriculum enhanced with instructional practices that fit the universal design criteria. Third, the successive levels of instruction vary in intensity and explicitness from the first level. Using levels

of instruction is a way to prevent learning difficulties and ensure that students with disabilities benefit from instruction in the general education classroom. However, researchers need to continue to explore ways to reach students who make minimal gains within the scope of existing resources in the schools (O'Connor, 2000; Torgesen, 2000; Vellutino et al., 2000). This is not an easy task given the personnel constraints placed on schools by budgets.

For students with disabilities to have meaningful access to the general education curriculum and to ensure their progress in it, we must continue to advocate for it as well as refine instructional practices and identify models and frameworks for implementing these. These changes will require careful attention to professional development for both preservice and in-service teachers; they will need to know how to employ progress monitoring and research-based models of instruction for all students (Vaughn & Linan-Thompson, in press).

RESPONDING TO STUDENTS WHO RESIST TREATMENT

What type of instructional intervention do students who fail to respond to treatment need? We have made great strides in identifying effective interventions for students with learning disabilities; however, some students make minimal gains despite our best efforts. Often labeled *treatment resisters*, these students do not respond to well-designed and implemented interventions. After reviewing four studies that provided reading interventions for students struggling with reading, Torgesen (2000) determined that between 2 and 4 percent of students in schools today will fail to make substantial gains in reading even after being provided intensive instruction. Other researchers (O'Connor, 2000; Vadasy et al., 2000; Vaughn et al., in press) have documented the existence of this group of children. In all four studies students at risk for or identified as having learning disabilities were provided intensive reading instruction in small groups or one on one. Although the majority of the students who participated in these studies made adequate gains, some students in each study did not.

To date we have no way of identifying which students will fail to respond to treatment prior to intervention and we have yet to determine the best way to meet the needs of this group of children. Identifying interventions that are effective with students who make minimal gains is imperative if we are to ensure that all students have access to the general curriculum. As Torgesen (2000) stated, "to know what kind of instruction is most effective is not the same thing as knowing how much of that instruction, delivered under what conditions" (p. 63) is enough. This question remains to be answered.

RESPONDING TO CULTURALLY AND LINGUISTICALLY DIVERSE STUDENTS

Are current interventions responsive to the needs of students with disabilities from culturally and linguistically diverse backgrounds? Students from diverse backgrounds are represented in general education and special education in increasing numbers. The *Twenty-third annual report to Congress on the implementation of the Individuals with Disabilities Education Act* (U.S. Department of Education, 2002) reports that 15.8 percent of students with learning disabilities are Hispanic, 18.3 percent are African American, 1.4 percent are Asian American, and 1.4 percent are American Indian. Seventy-three percent of the 174,530 students who have limited proficiency in English speak Spanish as their first language. In addition, 27.8 percent

of students with one disability live in households with incomes below the poverty level. Although we have extensive research on the efficacy of instructional interventions, many of these studies do not include students from culturally, linguistically, or economically diverse backgrounds. If they do, results are not disaggregated from majority students (Swanson, Hoskyn, & Lee, 1999). Given the increasing number of students from diverse backgrounds, it is imperative that we support research that not only includes students with disabilities from culturally and linguistically diverse backgrounds but also documents the extent to which these interventions are appropriate for students from diverse backgrounds.

Figueroa, Fradd, and Correa (1989) noted the dearth of research documenting interventions that improve the academic abilities of English Language Learners. Gersten and Baker (2000) located only nine studies that examined interventions and included control groups that contributed to that knowledge base. The knowledge base for students from other culturally and linguistically diverse backgrounds is just as sparse. We are just beginning to explore the effectiveness of using interventions developed for monolingual English speakers with English Language Learners. There is a small but growing body of research that has documented the efficacy of instructional interventions in reading (Gunn, Biglan, Smolkowski, & Ary, 2000; Linan-Thompson, Vaughn, Hickman-Davis, & Kouzekanani, 2003; Quiroga, Lemos-Britton, Mostafapour, & Berninger, 2002) with English Language Learners. In all three studies English Language Learners not only benefited from the instructional intervention but benefited regardless of their English language proficiency.

In mathematics Rodriguez, Parmar, and Signer (2001) examined the understanding of number line concepts of culturally and linguistically diverse fourth graders with disabilities. They found that students' difficulty in solving number-line-based word problems extended beyond lack of language proficiency and included a limited range of strategies and failure to apply the number line to solve problems. These difficulties are similar to the difficulties experienced by monolingual English students with disabilities. While preliminary, these findings seem to indicate that while language considerations are important, interventions that have proven effective for students with disabilities who are monolingual English speakers can improve outcomes for English Language Learners.

The call for research that focuses on instructional interventions with students from culturally and linguistically diverse backgrounds continues. Areas that require further study include distinguishing between language growth and academic growth (Gersten & Baker, 2000) and the efficacy of instructional interventions in all academic areas involving students from culturally and linguistically diverse backgrounds. However, if we are to make a significant impact on the education of students from diverse backgrounds, research in this area must increase at a more rapid rate.

CONCLUSION

As we enter the twenty-first century, we are still facing enormous challenges. Even though we get converging evidence on effective practices for teaching students with learning disabilities, factors that affect instruction—such as increasing student diversity, the failure of some students to make adequate gains, and changing expectations for students with disabilities—continue to change. Mandates for students with disabilities to have increased access to the general education curriculum and to participate in accountability testing require that we con-

tinue to develop and refine instructional interventions. Providing different levels of instruction in the general education classroom is one way of enhancing instruction for all students prior to referral; it will ensure that all students will have meaningful access to and can progress in the curriculum.

QUESTIONS FOR FURTHER DISCUSSION

1. How does the focus on prevention affect the current approaches for identifying students with disabilities?
2. How much extra instruction and individualized attention is feasible in a general education classroom?
3. What factors might affect schools' ability to institute a prevention model?
4. Is it feasible to expect that all students will have access to and make progress in the general curriculum?
5. What are the implications of this approach for students from cultural and linguistically diverse backgrounds?

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