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Full inclusion programs for elementary students with learning disabilities: Can they meet student

needs in an era of high stakes accountability?

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Abstract

Issues related to full-time inclusive programs have been particularly controversial for elementary students with learning disabilities. The nature of this controversy has changed substantially over the last decade, given the emphasis on high stakes accountability for all students in the No Child Left Behind (NCLB) Act and IDEA 2004. In spite of this continuing controversy, increasing numbers of students with LD are being educated in inclusive settings. This article reviews research related to the extent to which full inclusion programs provide students with learning disabilities the support needed to meet high stakes accountability standards in reading and math. The results reveal that while some elementary students with LD in full-time inclusion classrooms made significant educational progress, a majority of students made very little academic progress, even when extraordinary resources were used to develop the programs.

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INTRODUCTION

In 1975, Congress passed the Education for All Handicapped Children Act (subsequently renamed the Individuals with Disabilities Education Improvement Act (IDEA)), which included a mandate that students with disabilities be educated in the least restrictive environment (LRE). This mandate provides a clear preference for educating students with disabilities in the general education classroom (Danielson & Bellamy, 1989; Turnbull, Turnbull, Shank, Smith, & Leal, 2004), and has provided the legislative support for the current movement toward educating students with disabilities in inclusive settings (McLeskey, Rosenberg, & Westling, 2010).

While most professionals seem to support the LRE mandate and the general principle of inclusion (Fuchs & Fuchs, 1998; McLeskey, 2007; Scruggs & Mastropieri, 1996; Zigmond, 2003), much controversy exists regarding the interpretation and application of this mandate in practice (Fuchs & Fuchs, 1994; Kauffman, 1993; McLeskey, 2007; Zigmond, 2003; Zigmond, Kloo, & Volonino, 2009). Central to this controversy is the issue of determining whether inclusive programs can produce desired achievement outcomes for all students with disabilities (McLeskey, 2007; McLeskey & Waldron, 2011). More specifically, some have contended that advocates for inclusion have erred by placing too much emphasis on the place an education occurs or on 'full inclusion', and not enough emphasis on the quality of instruction and educational outcomes for students (Fuchs & Fuchs, 1994; Kauffman, 1993; McLeskey, 2007; Zigmond, 2003; Zigmond, Kloo, & Volonino, 2009).

Issues related to full inclusion have been particularly controversial with regard to the education of students with learning disabilities (McLeskey, 2007; Zigmond, 2003; Zigmond, Kloo, & Volonino, 2009). These students have mild or judgmental disabilities (Reynolds, Wang, & Walberg, 1987), which some professionals have assumed could be successfully addressed in inclusive general education classrooms (Lipsky & Gartner, 1987; Reynolds, Wang, & Walberg, 1987; Sailor & Roger, 2005; Skrtic, Harris, & Shriner, 2005; Stainback, Stainback, Courtnage, & Jaben, 1985; Will, 1986). These so called 'full inclusionists' have called for the full-time education of students with learning disabilities in general education classrooms, while others have taken the position that this full-time placement will not meet the needs of many of these students (Fuchs & Fuchs, 1998; Zigmond, 2003).

Further complicating the controversy regarding full-time inclusive programs for students with LD has been the passage of federal legislation (i.e., NCLB and IDEA 2004) mandating high stakes accountability for all students, including those with learning disabilities (Fuchs, Fuchs, & Stecker, 2010; Hoppey & McLeskey, 2011). Given these mandates, students with learning disabilities are expected to reach achievement levels comparable to typically achieving peers on state accountability measures. This requires that programs provide support for students with LD that accelerates achievement to levels that allow these students to begin to catch up with typically achieving peers (Fuchs, Fuchs, & Stecker, 2010). While some have advocated for this level of program effectiveness in the past (e.g., Zigmond, Jenkins, Fuchs, et al., 1995), this is a much higher standard than has been employed for most programs for students with LD in previous research or practice.

As professionals have continued to engage in the controversy surrounding full inclusion for students with learning disabilities (Zigmond, Kloo, & Volonino, 2009), national data indicate

that these students are being educated in general education classrooms in increasing numbers.
For example, in 1989-90, about 22% of students with learning disabilities were educated in a
general education setting for most of the school day (i.e., 80% or more). By 2008-09, this
proportion had increased to 62% (McLeskey, Landers, Hoppey, & Williamson, 2011). Thus
many schools continue to move toward educating students with learning disabilities in more
inclusive settings, in spite of the controversy regarding inclusive placements and concerns
related to program effectiveness and student achievement (McLeskey, 2007; Zigmond, 2003;
Zigmond, Kloo, & Volonino, 2009). This has caused some to conclude that for students with
learning disabilities, the "preferred service delivery model is full inclusion with co-teaching"
(Zigmond, Kloo, & Volonino, 2009, p. 196).

Given the increasing numbers of students with learning disabilities who are being
educated in general education classes for much of the school day, as well as the continuing
controversy regarding full inclusion and program effectiveness, it is important to determine if
full-time inclusion programs produce reasonable outcomes for these students in practice. Given
this focus, the purpose of this review is to examine the extent to which full-time inclusion
programs for elementary students with learning disabilities have been effective in increasing
achievement in reading and mathematics to levels that would be acceptable in practice. We limit
this review to elementary schools and the content areas of reading and mathematics, as most
studies have been conducted at the elementary level and have used progress in reading and
mathematics as outcome measures.

METHOD

Criteria used for selecting investigations

A search of the professional literature from 1980 to the present was conducted for data based articles that had been published in peer-reviewed journals. ERIC and PsycInfo search engines were used, and key words included combinations of mainstreaming, learning disabilities, inclusive schools, program effectiveness, academic achievement, elementary education, and resource room programs. When articles that could be appropriate for this review were located, reference lists of these manuscripts were reviewed for additional studies. A total of 342 possible articles were located and examined for appropriateness.

After locating articles, the following criteria were used to select the investigations that were used in this review.

1. Articles published in refereed journals from 1980 to the present. Dissertations, book chapters, and other manuscripts were not included in this review because of the highly variable quality of this research. Furthermore, the search began in 1980 because the current inclusion movement commenced shortly after this time.

2. Investigations were limited to elementary age students, and outcome measures in reading and/or mathematics. Most investigations of full inclusion have been conducted with elementary students and have addressed reading and mathematics content areas. Furthermore, inclusive programs differ significantly at the secondary level, and outcome measures are more variable than at the elementary level.

3. Studies were selected that used all or mostly students with learning disabilities. Students with LD make up almost 50% of school-aged students with disabilities (McLeskey, Rosenberg, & Westling, 2010), and are the most frequently investigated group in full inclusion programs for students with mild disabilities.

4. Investigations included comparisons of academic progress made in reading and/or math by students with disabilities in full-time inclusion programs versus typical or low achieving peers. Technically adequate tests were used to measure student progress. This included either a standardized test, or a curriculum based measure (i.e., BASS).

5. Students must have been in a full-time inclusion program for approximately a year (e.g., pre and post-tests in fall and spring of one school year) or longer.

The literature review resulted in eighteen database investigations that provided some comparison of elementary students with learning disabilities who were educated in full time inclusive settings. However, ten of these investigations were eliminated because they only compared academic progress for students in full inclusion programs with students who were taught in resource programs, had technically inadequate measures, or did not adequately explain how student comparisons were made. This resulted in eight investigations that compared the academic progress of students in full inclusion programs with their peers who did not have disabilities.

Overview of research investigations on full inclusion

All of the investigations included in this review used location of instruction as an independent variable, and examined the academic outcomes for students who were placed in a full inclusion setting. Given this design feature, these investigations share the weaknesses of all studies that have attempted to use location of instruction as an independent variable. For example, all of these investigations lack random selection of the sample studied and random assignment of treatments (Lindsay, 2007).

Perhaps the most important weakness of these investigations is that location of instruction is a globally defined variable, as inclusive classrooms typically use a broad and variable range of interventions to address student needs. Such a global variable does not directly influence student achievement, nor does a given placement setting "eliminate or guarantee the presence of effective instructional practices" (Leinhardt & Pallay, 1982, p. 560), although some settings may facilitate the delivery of certain interventions.

In spite of these shortcomings, the study of the efficacy of placement settings remains an important area of study because "inclusion" is a variable that has such potency with regard to policy decisions; is easily interpreted by advocates, parents, and professionals; and continues to have a significant impact on many local schools (Leinhardt & Pallay, 1982; Lindsay, 2007; Zigmond, Kloo, & Volonino, 2009). This is especially true with regard to students with learning disabilities, given the visibility and importance of policy issues related to inclusion for these students (Fuchs & Fuchs, 1994; Fuchs & Fuchs, 1998; McLeskey, 2007; Zigmond, Klee, & Volonino, 2009).

Finally, it is important to note that this review focuses on examining the feasibility of full-time inclusion programs for students with LD within the current policy context of high stakes accountability (Fuchs, Fuchs, & Stecker, 2010; Hoppey & McLeskey, 2011). Given this context, students with learning disabilities are expected to reach high achievement levels as represented by benchmarks with respect to state accountability measures. This requires that program effectiveness be measured based on more than comparisons of the achievement growth of students with LD in inclusive and resource settings. More specifically, to address the current policy context given accountability requirements of the No Child Left Behind Act (NCLB) and IDEA 2004, program effectiveness must document the extent to which inclusive settings

accelerate achievement to levels that allow students with LD who are behind peers in an academic area to begin to catch up (Fuchs, Fuchs, & Stecker, 2010; Zigmond, Jenkins, Fuchs, et al., 1995). Thus our primary emphasis is on the extent to which inclusive programs can meet the needs of students with LD by ensuring that these students make sufficient academic progress to narrow the achievement gap with peers and make progress toward meeting high stakes accountability standards.

RESULTS

Characteristics of the full inclusion programs. Across the investigations, the extent to which the planning and implementation of the inclusive program was described varied. Descriptive information that was provided made it clear that different approaches were used in each of the investigations to plan and implement the inclusive programs. An examination of the information that was provided regarding how the programs were planned and implemented revealed several common characteristics across the programs. These included:

1. Teams of teachers, administrators, and outside experts planned and implemented most of the inclusive programs.

2. Several of the programs had assistance from university faculty who worked with teachers and administrators during planning, and also provided high quality professional development to prepare teachers for delivering high quality instruction in the inclusive classrooms.

3. All of the settings reported the use of supports from a special education co-teacher in the general education classroom, and several of the settings also provided supports by using paraeducators.

4.   Several of the investigations reported that the inclusive programs were built upon

the general education curriculum.

5.   All of the settings reported the use of effective instructional strategies, including

cooperative learning, peer tutoring, regrouping for intensive instruction, and the

use of evidence based instructional strategies such as Reading Mastery

(Engelmann & Bruner, 2003).

6.   Several of the settings reported using strategies to monitor individual students

progress (e.g., CBM).

Comparison of student progress using group designs. Four of the investigations that

provided comparisons of the academic progress of groups of students with LD in full inclusion

programs versus groups of typical peers in reading and/or math are briefly described in Table 1.

These investigations will be initially reviewed, followed by a review of four investigations that

used a common curriculum based measure to compare the progress made by individual students

with LD with their typical peers.

<Insert Table 1 about here>

Bear and Proctor (1990) investigated an inclusive program called Team Approach to

Mastery (TAM) that was being implemented in a school district in Delaware. This program used

special education co-teachers in general education classrooms to provide full-time support for

students with mild disabilities in general education classrooms. Both teachers provided support

for all students using the district approved general education curriculum. A structured behavior

management approach using point cards was also used in all TAM classes. Otherwise, these

classes did not systematically differ from other general education classrooms in the school district.

This investigation examined the educational progress in reading and math that was made by 47 students with mild disabilities (41 with learning disabilities), and 176 typical peers in third grade TAM classrooms in randomly selected schools. Student progress over one school year was measured using the *Comprehensive Test of Basic Skills (CTBS)* (McGraw-Hill, 1983) as a pre- and post-test. Results revealed that general education students made significantly more academic progress in reading and math than did students with mild disabilities.

Deno and colleagues (1994) compared the academic progress of students with learning disabilities versus low achieving peers in eight full inclusion programs across three districts. In two schools, the Alternative Learning Environments Model (ALEM) (Wang & Birch, 1984) was used. This model "is based on a mastery learning model built around a sequence of objectives with instruction prescription sheets related to those objectives" (Deno, et al., 1994, p. 151). Lessons are taught using the principles of effective instruction to large groups, and this is followed by support from co-teachers who work with small groups or individual students to address specific skill deficits. In three schools in another district, the Companion Reading Program (Von Harrison & Gottfredson, 1986) was used. The characteristics of this program include high expectations for all students, a mastery approach to instruction using a task sequence, an emphasis on peer interaction as students are taught "routines to guide, check, and praise their partners in daily paired teaching sessions" (Deno, et al., 1994, p. 151). Finally, three schools used the Data-Based Intervention Model, which is a preventive models that uses frequent monitoring of student progress using curriculum based measures (Deno, 1985) to "identify potential problems, set goals, monitor student progress, and evaluate program effectiveness"

(Deno et al., 1995, p. 151). The researchers did not provide assistance in implementing these models in the local schools.

Student academic progress was measured over one school year using a curriculum based measure, the *Basic Academic Skills Samples (BASS)* (Espin, Deno, Maruyama, & Cohen, 1989) for 255 students with disabilities and 503 low achieving students. Analyses comparing students with disabilities and low achieving students across the 8 schools revealed that students with disabilities made significantly less progress than the low achieving students on the BASS in both reading and math.

Jenkins and colleagues (1994) reported on an experiment in school restructuring, as they worked with one school to accommodate students' reading differences in general education classrooms by using cooperative learning; cross-age and peer tutoring; intensive, high quality reading instruction; and support in the general education classroom from special education and Title I co-teachers. The *Metropolitan Achievement Test (MAT*: Prescott, Balow, Hogan, & Farr, 1984) and the *BASS* (Espin, et al., 1989) were used as pre- and post-tests over the course of one school year. The results of their investigation revealed that general education (n = 258) and low achieving students (n =51) both made significantly greater gains on the BASS in reading than did students with disabilities (n = 23). On the MAT, student progress in reading did not differ significantly across the three groups.

A final investigation by Wang and colleagues (1984) examined the impact of the previously described ALEM model across 26 classrooms in 5 schools. The *Stanford Diagnostic Math Test* and the *California Achievement Test (CAT*) were used as pre- and post-tests to measure student progress in reading and math across one school year for 69 students with mild

disabilities and 178 general education students. The results revealed that general education students made significantly more progress in math, while the two groups did not differ in reading progress.

In sum, students with LD made significantly less progress in math than general education or low achieving students in all three of the investigations that included math as a dependent variable (Bear & Proctor, 1990; Deno, et al., 1994; Wang, Peverly, & Randolph, 1984). However, in reading, results were mixed. In two of these studies (Bear & Proctor, 1990; Deno, et al., 1994), results revealed that general education or low achieving students made significantly more progress in reading than students with learning disabilities. In contrast, two other investigations found that students with learning disabilities made progress in reading that was comparable (i.e., did not differ significantly) when compared to general education students or low achieving students on at least one measure (Jenkins, et al., 1994; Wang, Peverly, & Randolph, 1984).

Comparisons of individual student progress. Investigations that provided comparisons of the academic progress of individual students with LD in full inclusion programs versus typical peers in reading and/or math are briefly described in Table 2. Two of these investigations are reported in one article (Zigmond, et al., 1995). It is noteworthy that all four investigations use the *BASS* (Espin, et al., 1994) to measure student progress in reading, while one investigation used the *BASS* to measure student progress in math. Another noteworthy feature of these investigations is that each of the inclusive programs was developed with support from the university faculty who conducted these studies. Thus, each of these settings had an unusual amount of expert support and financial assistance to develop and implement the full inclusion programs.

<Insert Table 2 about here>

Klingner and colleagues (1998) worked with one elementary school to develop, implement and evaluate the effectiveness of a full inclusion program on the reading progress of 54 low to average achieving and 35 high achieving general education students, and 25 students with LD in grades 3 through 6. Two special education teachers were assigned as part-time co-teachers in three general education classrooms, and spent from 45 to 90 minutes per day in these classes. The role of the special education teacher was to "co-teach, instruct small groups of students as needed, and work one-on-one with students with LD" (p. 155). The model inclusion program used the principles of responsible inclusion (Vaughn & Schumm, 1995). It should be noted that students with LD who were placed in the full inclusion program were only those who were likely to benefit from this placement, while resource room services were provided for the remaining students with LD for whom the full inclusion placement was not deemed appropriate.

All participating teachers in this full inclusion program participated in identifying content areas in which they needed assistance to support students with LD in general education classrooms. Areas identified were reading and writing. Four highly effective instructional strategies were then selected and the investigators provided high quality professional development related to each of these strategies over the course of one school year. The strategies were: Process Writing (Calkins, 1986), Collaborative Strategic Reading (Klingner, Vaughn, & Schumm, 1998), Classwide Peer Tutoring (Delquadri, Greenwood, Whorton, Carta, & Hall, 1986), and Making Words (Cunningham & Cunningham, 1992).

The investigators administered *BASS-Reading* (Espin, et al., 1989) in the fall and spring of one school year to students with LD and general education students in the full inclusion

classrooms. The results of the investigation revealed that 32% of students with LD exceeded the

mean for grade level achievement in reading on the *BASS*, while 37% of low to average

achieving students, and 63% of high achieving students also progressed at this level.

In a second study, Waldron and McLeskey (1998) reported on the academic progress in

reading and math of 71 students with LD in three elementary schools. The investigators worked

with these schools using a systematic approach to school change (McLeskey & Waldron, 2000)

during the spring and summer before the programs were implemented. During this time teams of

teachers explored effective practices to support students with LD in inclusive settings, visited

sites with effective, inclusive programs, received professional development related to effective

practices (e.g., cooperative learning, collaboration and co-teaching, differentiated instruction),

and planned the implementation of the inclusive program.

Although the inclusive programs were tailored to the unique needs of the three schools,

and thus differed in many ways, there were common features across the three settings. These

features included: special education teachers worked as co-teachers in two or more general

education classrooms, the general education curriculum was used for all student programs,

school organization was examined and changed to ensure the efficient use of resources,

instructional assistants were used to support students in general education classrooms, and

attempts were made to avoid disproportionate placement of students with disabilities in any

general education classroom.

The *BASS-Reading* and *BASS-Math* were administered to general education students and

students with LD in grades 2-6 during the fall and spring of one school year. Results revealed

that 48% of students with LD made progress in reading that was comparable to general education

peers, while 34% of students with LD made similar progress in math. These investigators also used a standardized achievement measure to divide the students with LD into two groups, one with mild reading or math disabilities (the higher achieving students), and a second with severe reading or math disabilities (i.e., the lower achieving students). The progress these students made on in reading and math over the course of the school year was then examined. These data revealed that 67% of the students with mild LD made progress comparable to general education peers in reading, while 32% of the students with severe LD made comparable progress. In math, a similar comparison revealed that 44% of students with mild LD made progress comparable to general education peers on the *BASS*, while 31% of students with severe LD made similar progress.

Zigmond and colleagues (1995) reported on two investigations of full time inclusive programs for students with LD in elementary schools. Faculty from the University of Pittsburgh and the University of Washington initiated the development of these inclusive schools. In each of the settings, schools were restructured to support all students with LD in general education classrooms using models that were tailored to the needs of each school. The effective instructional and support strategies were used across settings, and included building based problem solving teams, ongoing progress monitoring, peer tutoring, and instruction in organizational/study skills.

The first investigation examined full inclusion programs that were implemented in four elementary schools in Pennsylvania, with support from faculty at the University of Pittsburgh. In these schools, faculty, administration, and university faculty engaged in a yearlong planning process prior to implementation. Professional development was provided for teachers and administrators regarding practices for supporting students in inclusive classrooms. In these

settings, the special education teachers worked as co-teachers and co-planners of instruction. This included spending from 30 to 45 minutes per week co-teaching in each general education inclusive classroom. Grouping patterns were also modified in the general education classrooms to provide special education teachers with time to work with small groups of students using instruction that was more explicit, strategic, and more closely monitored than was possible in a general education classroom with only one teacher.

Instructional practices in the general education classrooms were modified to provide more effective literacy instruction, including the use of graphic organizers and cognitive strategies. The schools also reduced the emphasis on content coverage, and focused on intensive instruction of critical knowledge and skills. Teachers also revised grading criteria so that they could be used to reward students and accommodate individual differences.

The *Basic Academic Skills Samples (BASS)* (Espin, et al., 1989) in reading was administered to 95 students with LD in the four full inclusion schools in the fall and spring of one academic year. A total of 33% of the students with learning disabilities made average or above gains when compared to general education peers in these settings.

The second investigation reported by Zigmond et al. (1995) was conducted in one elementary school in Washington State. In this setting, faculty from the University of Washington worked with teachers and administrators from the elementary school to plan changes in the school during the summer prior to the implementation of the full inclusion program. Professional development was provided throughout the school year at the school to support teachers in developing skills needed to support students in inclusive classrooms. In addition, an intervention team met every week to plan, problem solve, and provide teachers with support.

In this elementary school, one special education teacher and one paraeducator, as well as 1.5 compensatory education teachers and one compensatory education paraeducator were used to provide students who struggled to learn support in the general education classroom. This included in-class assistance to individuals or small groups of students during reading, language arts, and mathematics. These teachers and paraeducators also provided small group phonics lessons for students who were struggling with decoding and word recognition, and managed a cross age peer-tutoring program. Finally, cooperative learning and a systematic program to teach students school behaviors and organizational skills were used in general education classrooms.

During the fall and spring of one academic year, the *BASS-Reading* was administered to 13 students with LD in this full inclusion elementary school. Only 23% of the students with learning disabilities in this setting made average or above gains when compared to general education peers.

Across these four investigations, full inclusion programs were developed in nine elementary schools. In these schools, the academic progress of 204 students with LD in reading was measured using the *BASS-Reading*, and compared to the progress made by general education students. The results across investigations revealed that 37% (a range of 23% to 48% across settings) of the students with LD made progress that was comparable to or greater than average progress made by general education students. Only one of the investigations measured the progress of students with LD in math. Waldron and McLeskey (1998) monitored the progress of 71 students with LD in three full inclusion elementary schools using the *BASS-Math*, and compared the progress of these students with general education peers. The results of this investigation revealed that 34% of the students with LD made average or greater progress in math during the school year.

DISCUSSION

This review examined the academic progress in reading and mathematics relative to general education peers that was made over the course of a school year by elementary students with LD who were educated in full inclusion programs. The results of comparisons of groups of students with LD across four investigations revealed that students with LD made significantly less progress in math than general education or low achieving peers. In reading, the results were mixed, as two of the investigations found that students with LD made progress in reading that was comparable to general education peers on at least one measure of reading, while in two other investigations, students with LD made less significantly progress than general education or low achieving peers.

Additional insight into the effectiveness of full inclusion programs is provided by four investigations that compared the progress of individual students with LD over the course of one year with general education peers in reading and math. The results of these investigations revealed that 37% of students with LD across 9 schools made progress in reading that was at least comparable to their general education peers. Similarly, in one investigation across three schools, 34% of students with LD made progress in math that was comparable to general education peers.

These results reveal that well designed, well-funded full inclusion programs may provide sufficient support for some students with LD to meet an adequate yearly progress type of criterion in reading and math. The findings from the four investigations that used the BASS to compare the progress of individual students with LD to their general education peers suggest that about one-third of students with LD make substantial progress, and could meet AYP standards

when educated in a full-inclusion program. However, these same investigations revealed that about two-thirds of students with LD did not meet this criterion.

This finding has added importance, given the mandates in NCLB and IDEA 2004 for higher levels of accountability for all students, including those with learning disabilities. Based on current accountability standards, most students with LD who were served in full inclusion settings did not make sufficient progress to catch up with peers and meet grade level benchmarks. More specifically, given this level of progress, many students with LD will continue to fall further behind peers in reading and math, and, as they move through secondary school, increasing demands for reading and math skills will result in failure for growing numbers of these students.

While advocates for full inclusion programs expected that collaboration between general and special educators would result in full-time programs that met the needs of all students with LD (Lipsky & Gartner, 1987; Reynolds, Wang, & Walberg, 1987; Stainback, Stainback, Courtnage, & Jaben, 1985; Will, 1986), these programs have clearly not met this goal. Overall the results of this review of research reveal that about two-thirds of students with LD do not have their needs met in full inclusion programs, and continue to make limited educational progress in reading and math. Of course, when inclusive classrooms are well designed (i.e., they are built upon research based practices and instruction that is differentiated to meet diverse student needs), they meet many of the needs of elementary students with LD for much of the school day (McLeskey, Waldron, & Redd, 2011). However, what these students are provided in these settings is a very good general education (McLeskey & Waldron, 2002; Zigmond & Baker, 1995, 1996), and not the specialized instruction that many elementary students with LD need to learning basic reading and math skills that are required if they are to succeed in school

(McLeskey & Waldron, 2011). Given these outcomes, we conclude that this research does not provide a justification for full-time inclusion programs for most students with learning disabilities.

IMPLICATIONS

If full-time inclusive programs do not work for all students with LD, and resource classes often work no better (Swanson, 2008; Vaughn, Levy, Coleman, & Bos, 2002), the question remains--What does work to significantly improve academic outcomes for students with learning disabilities? Over the last decade, much research has addressed this topic, mostly in the content area of reading (Gersten, et al., 2009; McLeskey & Waldron, 2011). The results of this research have revealed that many elementary students with learning disabilities can make significant academic progress when provided with high quality, intensive instruction in small, homogeneous groups for a limited period of time (Foorman & Torgesen, 2001; Gersten, et al, 2009; Holloway, 2001; Marston, 1996; Torgesen, 2002; Torgesen, Alexander, Wagner, Rashotte, Voeller, & Conway, 2001; Vellutino, et al., 2006). The academic gains that these students make are often significantly greater than gains that are experienced by most students with similar difficulties who are educated in high quality inclusive settings (Marston, 1996; Torgesen, et al., 2001; Vellutino et al., 2006; Waldron & McLeskey, 1998; Zigmond, et al., 1995). Most importantly, this research reveals that for perhaps as many as 50% of these students, significant academic gains can result in 'catching up' with peers (Torgesen, et al., 2001; Torgesen, 2009; Vellutino et al., 2006).

This instruction is quite different from the large group, undifferentiated instruction that is often provided in special education resource classrooms (McLeskey & Waldron, 2011; Moody,

Vaughn, Hughes, & Fischer, 2000; Swanson, 2008; Vaughn, Levy, Coleman, & Bos, 2002).

More specifically, this high quality instruction is typically delivered to small groups (1-3) of

students with similar academic needs in separate settings, and is more intensive and explicit than

instruction that is provided in general education classrooms (Fletcher & Vaughn, 2009;

McLeskey & Waldron, 2002; Zigmond, 2003). Instruction that is explicit focuses on a small

group of targeted, high priority skills, which are taught directly with sufficient time for

instruction, modeling, and guided practice to ensure student mastery (Foorman & Torgesen,

2001; Gersten, et al., 2009).

Given the findings of this review, as well as recent research demonstrating what does

work for students with learning disabilities, we conclude that the best educational setting for

most students with learning disabilities is a well designed inclusive program, supplemented as

needed by short-term, intensive, small group instruction in a separate setting. This research

suggests that we now know *what* to do to make most students with learning disabilities

successful, but the difficulty that lies ahead is in determining *how* to ensure that these practices

are used in schools, given the poor instruction and student outcomes that have been typical of

resource settings (Bentum & Aaron, 2003; McLeskey & Waldron, 2011; Moody, Vaughn,

Hughes, & Fischer, 2000; Salend & Duhaney, 2007; Swanson, 2008; Vaughn, Levy, Coleman, &

Bos, 2002; Vaughn, Moody, & Schumm, 1998).

In conclusion, the results of research on full inclusion are, of course, not an indictment of

inclusion in general. Rather, what this research suggests is that we have failed in all too many

instances to ensure that the programs we provide for students with learning disabilities are *both*

inclusive and effective (McLeskey & Waldron, 2011). Full inclusion programs have clearly

failed to measure up in this regard for most students with LD. In contrast to those who advocate

for full inclusion, we would suggest that all elementary students with learning disabilities have a

right to be educated with general education peers in well-designed, inclusive classrooms for a

substantial portion of the school day, but they also have the right to reasonable and appropriate

educational outcomes. This suggests a stance that places equal value on inclusion and program

effectiveness, as we strive to create schools that are both equitable and excellent for all students.

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Table 1

Group comparisons on progress made by students with LD vs. general education peers in full inclusion classrooms

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Article	Subjects	Setting	Method/Design	Results

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Article	Subjects	Setting	Method/Design	Results
Bear & Proctor (1990)	Forty-seven students with mild disabilities (mostly LD) in inclusive Team Approach to Mastery (TAM) group and 176 students without disabilities in TAM classrooms.	Team Approach to Mastery (inclusive program) used co-teaching in all classes in a district wide initiative. Students were from 11 TAM classrooms. Typical students were from these same schools.	Student progress was monitored over 1 year in TAM using the Comprehensive Test of Basic Skills (CTBS) in reading and math.	Students without disabilities in TAM classes made significantly more progress than students with learning disabilities in these settings.
Deno, Maruyama, Espin, & Cohen (1990)	255 students with mild disabilities received special education in reading in 8 inclusive elementary schools. Progress was also monitored for 503	Inclusive schools used the Alternative Learning Environments Model (ALEM) in two schools, Companion Reading Program in three schools,	The Basic Academic Skills Samples (BASS) was used to monitor progress in reading and math over one school year for inclusive and low achieving groups.	Low achieving students made significantly more progress in reading and math than students with mild disabilities in inclusive settings.

	students who were low achieving in reading.	and Data Based Intervention in three schools. Elementary schools were selected from five school districts.		
Jenkins et al. (1994)	The inclusive elementary school included 51 students in Title I, 23 students with mild disabilities (21 with LD), and 258 general education students.	The inclusive elementary school provided reading instruction in the general education classroom using Cooperative Integrated Reading and Composition (CIRC), peer tutoring, supplementary instruction in phonics, and classroom based instruction from special or remedial education teachers.	Student progress in reading was monitored over one school year using the BASS and Metropolitan Achievement Test (MAT).	Students with disabilities made significantly less progress than general education students or remedial students on the BASS-Reading, but not on the MAT reading measures.
Wang, Peverly, & Randolph (1984)	Sixty-nine students with mild disabilities (mostly LD) and 178	The ALEM model was implemented in 26 classrooms across 5	Over 1 school year, student progress was monitored using the Stanford	The general education students made significantly more progress in

	general education students were included in this investigation.	elementary schools.	Diagnostic Math Test and California Achievement Test (CAT).	math, but not in reading than the students with mild disabilities.

Table 2

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Individual student comparisons on progress made by students with LD vs. general education peers in full inclusion classrooms

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Article	Subjects	Setting	Method/Design	Results
Klingner, et al. (1998)	In one elementary school, the sample included: 25 students with LD, 54 low to average achieving students, and 35 high achieving general education students in grades 3-6.	The inclusive program was developed in one elementary school using the principles of responsible inclusion described by Vaughn and Schumm (1995). Teachers were provided professional development by university faculty in the use of strategies for providing high quality inclusive instruction for one year prior to this	Over 1 school year, the BASS was used to measure reading progress.	After one year, 32% of students with LD had BASS reading gains that exceeded the grade level mean. In addition, 37% of low to average achieving students and 63% of high achieving students made comparable progress.

		investigation. Only students with LD who were determined as likely to benefit from inclusion were placed in inclusive classrooms.		
Waldron & McLeskey, 1998	Seventy-one students with LD in grades 2-6 were included in this investigation.	Three elementary schools developed Inclusive School Programs (ISP) as part of an on-going university-school partnership. Programs used teacher collaboration to develop differentiated general education programs.	Student progress was monitored over one school year using the BASS reading and math measures.	For students in the ISP, 48% (34) made progress comparable to general education peers in reading, while 34% made comparable progress in math.
Zigmond, et al., 1995—University of Pittsburgh Study	95 students in grades 2-6 with LD participated in this study.	Four schools from the Pittsburgh area developed inclusive programs with support from university faculty. A year-long	Student achievement in reading was monitored across one school year using the BASS reading measure.	33% of students with LD in the full-time inclusion classes made gains in reading that were comparable to general

		planning stage preceded implementation. Grouping patterns were changed to allow more time for addressing the needs of students with disabilities in general education classrooms. In addition, special education teachers worked as co-teachers in general education classroom to support students with LD.		education peers.
Zigmond, et al., 1995—University of Washington Study	13 students with LD in grades 2-6 participated in this investigation.	An inclusive program was developed in one elementary school working collaboratively with university faculty. Planning and professional development were conducted during	Student achievement in reading was monitored across one school year using the BASS reading measure.	23% of students with LD made gains in reading that were comparable to general education peers.

		the summer prior to implementing the program. Professional development continued through the school year. Students were provided in class support in reading by special education teachers and paraeducators.		