

## Full Inclusion and Students with Autism

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*The concept of "full inclusion" is that students with special needs can and should be educated in the same settings as their normally developing peers with appropriate support services, rather than being placed in special education classrooms or schools. According to advocates the benefits of full inclusion are increased expectations by teachers, behavioral modeling of normally developing peers, more learning, and greater self-esteem. Although the notion of full inclusion has appeal, especially for parents concerned about their children's rights, there is very little empirical evidence for this approach, especially as it relates to children with autism. This manuscript addresses the literature on full inclusion and its applicability for students with autism. Although the goals and values underlying full inclusion are laudable, neither the research literature nor thoughtful analysis of the nature of autism supports elimination of smaller, highly structured learning environments for some students with autism.*

The term "full inclusion" has recently appeared in the special education literature as a refinement on the prior movements of "integration," "mainstreaming," and the "regular education initiative." Although definitions of full inclusion vary, the fundamental concept is that students with special needs can and should be educated in the same setting as their normally developing peers, with appropriate support services, rather than being placed in special education classrooms or schools. The important difference between full inclusion and the earlier movements is that integration and mainstreaming assume that students have a special education setting as their home base, from which they might be placed periodically into regular settings when educators think they will be successful there, while full in-

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clusion assumes that the regular class is the home base, not a placement to be earned.

The benefits of full inclusion, according to advocates, are increased expectations by teachers of the learning potential of included students, behavioral modeling of normally developing peers, more learning, more self-esteem, more accepting attitudes on the part of peers, and less isolation and stigma for disabled students and their families.

As is too often the case in education, the philosophical movement for full inclusion has preceded systematic research on its assumptions or effectiveness. Although there is relatively little research on full inclusion by name, there is a somewhat larger research base on concepts related to full inclusion, such as the effects of segregated versus integrated classes. Most of this research, however, has looked at students with disabilities other than autism.

#### LITERATURE PREVIEW: NONAUTISTIC STUDENTS

In the past 15 years, there have been five significant literature reviews or meta-analyses, on special class placement versus regular class placement for students with disabilities. Carlberg and Kavale (1980) reviewed all available studies meeting their criteria: They investigated the effect of special classes, looked at students with a specifically identified disability, included a comparison group, and reported measurable results that could be included in a meta-analysis. A total of 50 studies published or presented between 1932 and 1977, involving approximately 27,000 students and 322 dependent measures, were included in the meta-analysis. Categories of exceptionality were defined as Educable Mentally Retarded (EMR) (IQs 50-75), slow learners (IQs 75-90), learning disabilities, and Behaviorally Disordered/Emotionally Disturbed (BD/ED). Dependent measures were classified into categories of academic achievement, social/personality measures, and other.

The overall finding from this review was an extremely small (-0.12) effect in favor of regular education. The range of effects across the 50 studies was wide (from -1.31 to +1.98), with 58% of the measures reflecting negative effects of regular education class placement. Regular education class placements appeared to be most beneficial for slow learners (effect size = -0.34), somewhat beneficial for EMR students (effect size = -0.14) and least beneficial for students with behavioral/emotional difficulties or learning disabilities (effect size = +0.29). There was no indication that students with autism were included in this review.

Strain and Kerr (1981) summarized studies dealing with academic and social effects of special class placement for EMR students. Reviewing aca-

ademic effects, they concluded that research trends support regular class placements as superior to special classes, particularly if individualized instruction was available as a component of the regular classroom programs. In terms of social effects, Strain and Kerr reported that earlier studies in the 1950s and 1960s generally indicated that students in special classes received higher social ratings from peers and teachers than students in integrated settings. This trend was reversed in the 1970s. They also interpreted the literature as suggesting higher self-concepts for EMR students in regular class settings.

Madden and Slavin (1983) reviewed research examining the effects, on academic and social development, of special classes, regular classes with resource support, or full-time regular classes for students with mild academic handicaps. For these students, individualized, appropriate instruction within the regular classrooms yielded higher achievement than did special education classes. When instruction in regular classes was not individualized, however, Madden and Slavin found that students with very mild handicaps could still benefit from the regular classroom placements, but "students with much more serious learning problems gain most in special classrooms" (p. 530). Similarly, with regard to social/emotional factors in these students, their review concluded that placement in regular classes with individualized instruction or resource supports was more beneficial than special class placement or regular classes without special services. Their conditions were again focused on students with mild academic handicaps; they stated that "few would maintain that students with IQs below 50 for example, would profit from assignment to regular academic classes, although such students might gain socially from mainstreaming for physical education, music, lunch, recess, and so on" (p. 559).

Ottensbacher and Cooper (1984) identified 103 studies that dealt with the question of social adjustment of students with mild cognitive handicaps. From these studies, they identified 43 which met the criteria of comparing educational placements (special classes, resource, or regular classes), employing a measure of social adjustment, and reporting quantitative findings. Together, these studies included 3,628 students with an average IQ of 69.7, and yielded 59 comparisons among educational placements. The overall effect was extremely small (+0.03), in the direction of favoring special educational classroom placements. The authors considered that the overall effect size did not adequately characterize the conflicting results of the more specific comparisons that they reported; that is, when special classes were compared with regular classes, the combined data indicated better social adjustment in special classes. When special classes were compared with resource classes, however, the combined probabilities were not significant, but were in the direction of favoring resource classroom placements. When

results were analyzed according to the type of measure of social adjustment, reports by teachers and peers favored special class placements while reports by other adults, usually classroom observers or parents, favored resource or regular classroom placement. Self-reports by the students themselves were nonsignificant, but tended to favor resource or regular placements. Ottensbacher and Cooper also reported a trend for measures of social adjustment taken after briefer studies (9 months) favoring regular or resource classes, whereas those taken after longer periods (25 months) favored special classes.

Wang and Baker (1985-1986) published a meta-analysis of methodologically sound research based on literature reviews and more recent empirical studies. Their meta-analysis of studies published between 1975 and 1984 examined students in integrated versus segregated settings and students before and after placements in integrated settings. The populations included in this meta-analysis included 541 students. Of these, 3% had learning disabilities, 53% had mental retardation, 19% had hearing impairments, 25% were described as having "mixed handicaps," and for 17% the handicapping condition was not known. Wang and Baker identified 11 studies which yielded 115 dependent measures. Meta-analysis indicated that mainstreaming was (effect size = 0.33) beneficial to the students in terms of achievement, attitudinal effects, and interaction. As with the other studies cited in this review, the beneficial effect found by Wang and Baker was not universal; 35% of the dependent measures suggested negative effects of the integrated placements (effects ranged from -1.86 to +1.91).

The literature reviews and meta-analyses described above examined the effects of educational placements on many different aspects of development. Results are not universally strong or supportive of fully included placements; instead they show slight trends favoring integrated over segregated programs, with great variability and strong indications that some students benefit more from partly or fully segregated programs instead of included settings. There is also a suggestion that more mildly handicapped students with fewer behavioral problems are typically the ones who benefit most from more integrated settings.

#### LITERATURE REVIEW: AUTISTIC STUDENTS

Although teaching students with autism raises many important questions about segregated versus integrated placement and the value of full inclusion, very few of the empirical studies or meta-analyses have addressed the needs of autistic students directly. There are, however, several reviews and studies that have focused on this population.

Strain (1983, 1984) and his colleagues (Hoysen, Jamieson, & Strain, 1984; Strain, Hoysen, & Jamieson, 1985) have focused on preschool and young elementary students described as "autistic like." In their studies, Strain's group has looked at generalization in segregated or integrated settings of social behaviors that have been stimulated during training sessions with normally developing peers. Although the data were not statistically analyzed, they were reported as demonstrating that learned social interaction skills generalized better in integrated, rather than segregated, settings. Because of the way that social interactions were defined and combined for reporting, however, it is not clear whether the autistic-like students increased their initiation of social interactions, responded in some verbal or nonverbal ways to bids from peers, or merely shared toys or materials in response to bids from peers. In addition to their reports on social interactions, Hoysen et al. (1984) also reported on the beneficial effect of an integrated preschool class on preacademic skills. Unfortunately, interpretations of these findings were limited by significant methodological issues: Subjects in the study, with one exception, appeared to be only minimally developmentally delayed, the study depended on the Learning Accomplished Profile (LAP) as a psychometric instrument to measure progress, and there was no indication that the postintervention assessments were performed by examiners blind to the study's hypothesis and goals.

Harris, Handleman, Kristoff, Bass, and Gordon (1990) have reported two studies from a preschool program comprising both integrated and segregated classes. The students were characterized by the authors as "high-functioning" in terms of IQ and the curriculum was language-based. The measure used to assess the effect of the educational intervention was the change in the ratio of language age to chronological age based on scores from the Preschool Language Scale. For both students with autism and normally developing peers, the authors reported significant increases in developmental level and rate by the end of the program. Differences between developmental level and rate changes between students with autism in segregated versus integrated classes were nonsignificant.

Myles, Simpson, Ormsbee, and Erickson (1993) presented data from a study examining the social interactions of preschool students with autism when their nondisabled, age-matched classmates were either present or absent. The students with autism attended the school 4 days per week while their peers attended twice a week, so that behavioral observation of a variety of classroom interactions among teachers and students could be made during both conditions. Results indicated that teachers interacted less with the students with autism when their peers were present (less praise, less instruction, fewer neutral comments, but marginally more assistance). The students with autism initiated very few interactions with anyone in either

condition. The authors concluded that physical integration alone is not sufficient to stimulate social interactions, which require structure, instruction, prompting, training of peer models, and other technologies. They also argued that social interactions and the development of functional skills are independent aspects of education that sometimes require different settings.

In summary, the research literature on full inclusion and students with autism is so limited that it provides an insufficient foundation for empirically based decisions about the benefits of this approach for this group of students. The limited data that are available, however, suggest that the benefits of full inclusion for students with autism might be even more limited than for the other handicapped students who have been studied.

### THE NATURE OF AUTISM AND THE GOALS OF EDUCATION

Educating students with autism requires an understanding of the unique cognitive, social, sensory, and behavioral deficits that characterize this developmental disability. These include limited and disordered language skills, unusual sensory processing, difficulty combining or integrating ideas, difficulty interpreting the underlying meaning or relationship of events they experience, problems processing multiple sensory stimuli, and resistance to unpredictability and change. Students with autism need special instruction in individually designed settings that minimize their deficits and present information in ways they comprehend. Many traditional educational techniques, appropriate for other students, are particularly ineffective for students with autism. Specifically, students with autism have a fundamental deficit in the area of language, so that verbal explanations of material and expectations are among the least productive ways of conveying information to them. Further, because most students with autism have relatively poor imitation skills, encouraging them to model the behavior of other students is usually ineffective. Finally, many students with autism find social rewards ("I am proud of you," "your buddies will look up to you") incomprehensible or meaningless, making this universally applied education technique of limited value.

While this description of characteristics unique to autism does not mean that students with autism are incapable of learning, it does mean that most of them require specialized instructional techniques. To the extent that regular classrooms cannot adjust to the special needs of many students with autism, the full inclusion model may limit the appropriateness of the education these students would receive under that model. First, full inclusion proposes that the best place for each student is in the regular class-

room. Many students with autism, however, perceive their environments differently from children with other handicaps or their nonhandicapped peers. They may find the noise of a regular classroom to be distracting or even painful, the colorful materials distributed throughout the classroom to be overstimulating, and/or the physical organization of the classroom inadequate for identifying where to go and what to do. As a result, these students may have considerable sensory-perceptual difficulties in the classroom, leading to disorganization, agitation and, in some cases, even aggressive outbursts. An important educational strategy for autism is to structure environmental conditions so that students can attend to and comprehend instruction (Mesibov, Schopler, & Hearsey, 1994; Schopler, Mesibov, & Hearsey, 1995). These manipulations can include the use of extensive soundproofing, isolated and visually bare work spaces, physical barriers that separate play and work areas, predictable routines, very small groups or individual instruction, and reliance on visual and gestural communication. While these modifications can be made to some extent in regular classes, many teachers may be frustrated by limitations on their ability to adjust their environments to the extent desirable or necessary for their students with autism.

In addition to the specific nature of autism and its implications for educational techniques, a related issue is the goal of education for students with autism. The explicit goals of the TEACCH Program are adult independence and community integration to the greatest extent possible. These goals are interrelated; the less supervision adults with autism need, the more community options they have to meet their residential, vocational, health, and recreational needs. Thus, developing independence should be a very high priority for students with autism. Although students with autism often develop excellent skills on individual tasks, they frequently have difficulty learning functional sequence of skills that they can execute without direct teacher intervention. To become independent, these students must develop the approach of looking for information in their environments, rather than watching familiar adults and waiting to be told what to do. When teachers can design and organize student environments, they can teach the students to look for and understand routines, visual cues, and organizational strategies, like working from top to bottom. Placing students with autism in integrated settings, however, may make it difficult for them to develop independence. Events change too rapidly for them to develop consistent routines or any confidence in their ability to understand environmental cues, so students often continue to look to teachers for cues on what they are supposed to do. Further, teachers may feel pressure to supervise these students' behaviors closely in order to help them fit in, which may end up fostering further dependence. Thus, even if students with

autism are helped to function adequately in regular classrooms, learning new skills and having no behavior problems, they might not be developing fundamental skills for independent functioning in adulthood.

Although most students with autism can learn to function in integrated, community-based settings, this should be a gradual process for these youngsters, especially those who are agitated by environmental stimuli or have difficulty with conceptual learning. Starting in self-contained classrooms makes it easier for many of these students to learn productive, independent routines. Some advocates of full inclusion argue that the only way to learn how to function in the community is to practice all skills there; however, this model of skill development is not typically the way people without disabilities learn. A football team, for example, does not practice only in game-like situations with other teams, and concert pianists do not practice only by giving concerts to large audiences. Although their goal is to use their skills in these situations, most players, coaches, and artists acknowledge that the skills are complex and are learned better by practicing drills in more isolated settings. Once the principles are understood and executed through these drills, they are then combined and applied to gamelike situations. A similar sequence is often appropriate for students with autism learning to function in community-based settings.

A positive aspect of full inclusion is that it may succeed in producing more appropriate models of support in regular classrooms for students who could function there with proper assistance. Overall, however, full inclusion for many students with autism might reduce educational options available for them.

Although sharing many characteristics, students with autism are also extraordinarily different from one another, from students with other handicaps, and from their nonhandicapped peers. Ranging in IQ from profoundly mentally retarded to gifted, in behavior from passive to hyperactive, in personality from gentle to explosive, this group requires many adaptations to meet their individual needs. Given their diversity, it is inconceivable that a single classroom model, no matter how ingenious teachers are in modifying it, could meet the individualized needs of all students with autism.

Kaufman and Hallahan (1995) raise the question of providing adequate support to students with diverse needs using a full inclusion model. "Thus the nagging \$64,000 question is whether effective 'support' from special educators could be harnessed for all students with disabilities under a full inclusion model. Neither the history of placement and service delivery models nor an analysis of placement issues in contemporary special education suggest an affirmative answer" (p. 15-16).

The overall effect of full inclusion will be to lose the continuum of services, achieved through years of advocacy, by drastically reducing or to-

tally eliminating special classroom options for students with autism. Similarly, recent position statements on full inclusion by the National Learning Disabilities Association and CHADD (Children with Attention Deficit Disorders) have emphasized the importance of a continuum of educational services and individualization of educational plans for their constituents—principles these organizations clearly see as threatened by the full inclusion movement. A recent report by the Department of Education, showing that learning-disabled students perform better in special classes rather than in full inclusion settings, supports these concerns.

A further concern is that full inclusion, as a policy, explicitly and implicitly discourages the development of specialized approaches, while the unique characteristics of students with autism make specialization essential. When specialized services are unavailable, students with autism and their families invariably suffer. Frustrated parents can recount a multitude of stories about how otherwise competent professionals misdiagnose their children or suggest inappropriate intervention techniques because they lack expertise in the subtle nuances and variations of autism. Treatment programs have reflected the same problem. While general treatment and educational strategies, such as positive reinforcement, and following a developmental sequence are often applicable to autism, they require specialized knowledge and training to apply appropriately to autistic students. Full inclusion inevitably encourages more generic strategies by placing students, irrespective of their disabilities, with professionals who are required to work with the entire range of students, including nonhandicapped peers.

In summary, while the goals and values underlying the philosophy of inclusion are laudable, neither the research literature nor thoughtful analysis of the nature of autism supports elimination of smaller, highly structured learning environments for some students with autism.

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## Collateral Effects of Parent Training on Family Interactions<sup>1</sup>

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*Recent research suggests that using naturalistic teaching paradigms leads to therapeutic gains in clinic settings for children with autism and related disorders. More recent studies are demonstrating that implementing these strategies within a parent training format may produce collateral effects in other areas of family life. The present experiment assessed collateral effects of two very different parent training paradigms during unstructured dinnertime interactions in the family setting. One paradigm focused on teaching individual target behaviors (ITB) serially, and the other focused on a recently developed naturalistic paradigm that teaches the pivotal responses (PRT) of motivation and responsivity to multiple cues. Two groups of families were randomly assigned to each of the parent training conditions. Pretraining and post-parent-training videotapes of dinnertime interactions were scored in a random order across four interactional scales (level of happiness, interest, stress, and style of communication). Results obtained for the four interactional scales showed that the families in both conditions initially scored in the neutral range, and the ITB training paradigm produced no significant influence on the interactions from pretraining to posttraining. In contrast, however the PRT parent training paradigm resulted in the families showing positive interactions*

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