INT. J. INCLUSIVE EDUCATION, 2002, VOL. 6, NO. 1, 63–78

Taylor & Francis
Taylor & Francis Group

Examining the general programmatic benefits of inclusive schools

DOUGLAS FISHER, VIRGINIA ROACH and NANCY FREY

(*Originally received 9 July 1999; accepted in final form 15 March 2000*)

The key elements of inclusive practices in the USA are examined through the lens of research from around the world. Pull-out and schoolwide programming are discussed, as well as membership and ability grouping. Student outcomes and student achievement studies are reviewed, and recommendations are made for future research.

Introduction

A school should not be a preparation for life. A school should be life. (Elbert Hubbard)

Traditionally, educators have used the approach called 'mainstreaming' to educate students in special education (NASBE 1992, Harrison 1998). In this method of education, students are assigned to a general education class for part or all of the student's instructional day, often with no special services except for the time they are pulled from the regular classroom (Rogers 1993). Despite the continued popularity of mainstreaming, we will describe an extensive body of research that indicates that this approach to special education is woefully inadequate.

A more recent trend for educating students who receive special education services is called 'inclusion'. In an inclusive approach, students receiving special education services attend their home school with age and grade peers. In an inclusive school, these special education services are provided in general education classrooms (Fisher *et al*. 2000). Thus, students with disabilities are not isolated into special classes or wings within the school (NASBE 1992). In sharp contrast to the findings documenting the ineffectiveness of mainstreaming, there is a large and continually growing set of research findings that verifies the positive outcomes of an inclusive education system (McGregor 1993, McGregor and Vogelsberg 1998).

Still, some might tend to question the adequacy of the research supporting inclusion since much of it has been conducted within the context of special education. However, despite the fact that much of the literature regarding inclusion does come from the field of special education, a closer inspection begins to reveal a broader pattern of support for inclusion from both special education and from the more general research on school

Douglas Fisher is at San Diego State University, San Diego, CA, USA. *Virginia Roach* is at the National Association of State Boards of Education. *Nancy Frey* is at the Florida Inclusion Network, FL, USA. Correspondence should be addressed to: Douglas Fisher: SDSU School of Teacher Education, San Diego, CA 92182, USA; e-mail: dfisher@mail.sdsu.edu

International Journal of Inclusive Education ISSN 1360–3116 print/ISSN 1464–5173 online © 2002 Taylor & Francis Ltd
http://www.tandf.co.uk/journals
DOI: 10.1080/13603110010035843

reform (Slee 1997). Indeed, this paper will demonstrate that there is a significant body of literature supporting the strategy of inclusion that has implications beyond special education. The fact that significant support for inclusion exists both within and independent of special education gives added credence to inclusion as an approach that benefits both general and special education.

Much has been learned about inclusion from the studies done in special education, but we have found it particularly instructive to take a broader view to see what evidence exists beyond special education that may shed light on the merits of inclusion. Others have also noted the value of looking beyond special education to analyse the inclusion issue. For example, on the final page of a recent report on inclusive schooling practices McGregor and Vogelsburg (1998) note: 'While we have learned much about what it takes to support students with a wide range of abilities in general education classes, *our lessons are largely grounded in the realm of special education*. Connections to the larger ''whole'' of the school are not clearly visible . . .' (p. 71, added emphasis).

In addition to advocating the need for balanced research, McGregor seems to be suggesting that there is another important reason to extend beyond special education for evidence of the success of inclusion—she implies that inclusion is not really present, or authentic, or effective unless it is developed as part of a standards-based, whole school reform effort. In fact, when evidence suggests that inclusive education fails when the effort is not part of a whole school effort (Mamlin 1999). A similar view is asserted throughout Jorgensen's (1998) book on restructuring high schools. Indeed, the book notes that many of the principles that underlie school reform are almost identical to those that provide the foundation for inclusion. These include: (1) school cultures in which differences are honoured, not just tolerated or accommodated; (2) interactive teacher—student partnerships that enable students to construct new knowledge and skills; (3) students being given adequate time to have productive learning opportunities; and (4) all students being allowed to study within a common thematic unit while pursuing individualized objective and standards.

Thus, we believe that it is exceedingly important to expand the examination of inclusive education and look at a variety of studies that can more fully illuminate our understanding of this important issue. Any conclusions drawn about inclusion will obviously be more firm if we find support for them from a variety of perspectives.

In this paper, we begin by providing a very brief history of the movement toward inclusion in the USA. Then we examine several key elements of the research on inclusion as an instructional model from across the world. In this section we discuss the issues of pull-out versus inclusive or whole school programming, inclusion as a membership issue, and the general issue of ability grouping and its relationship to inclusion. We then turn to the second major section and look at the broad topic of the impact of inclusion on student achievement and other student outcomes. In each section we cite literature both within and beyond special education that supports inclusion from researchers across the world. Finally, we discuss

the general dimensions of this research and make suggestions for further study.

A brief history of inclusion in the USA

Within a few years of its 1976 legislative inception, special education began to grow into a large and complex bureaucracy (NASBE 1992), and the programmes spawned by special education were largely specialized and distinct from traditional education in terms of instructional approaches, curriculum content and student placement (Lipsky and Gartner 1997). Unfortunately, many of the students who qualified for special education were not only isolated from their peers in regular education, but also they were performing very poorly academically (SRI 1991). This distinct system of schooling for students with disabilities has been referred to as a 'second system' programme (Wang 1988).

By the mid-1980s, in response to the inadequate education being provided to students with disabilities, many organizations and advocates began to call for including children with disabilities into the regular classroom (Wang 1988), under the assumption that this approach would improve student performance (Roach 1999). In the early 1990s, the focus of special education reformers was 'inclusion', which went beyond just admitting students with disabilities to the regular classroom and called for making students with disabilities truly a 'part' of the regular classroom experience. And now, the current focus of many advocates for students with disabilities is a more authentic and school or system-wide inclusion, recognizing the essential and interrelated role played by curriculum, instruction and placement (Roach 1999). In fact, the 1997 amendments to the Individuals with Disabilities Education Act are based on the premise that the most effective instruction is provided when it is grounded in the general education curriculum and delivered, to the maximum extent possible, in the general education classroom (Roach 1999).

Finally, it should be noted that over the past 10 years some special education advocates are increasingly focusing on the civil rights aspects of inclusion. Some view segregating students into separate schools and classes as akin to racial segregation and, thus, violates a student's right to be educated with his or her peers. Others note that just as with racial integration, inclusion can have the same broad-scale impact and benefit to education as desegregation can have in benefiting the whole society, beyond just one individual's improved circumstance.

If one thinks about inclusion beyond the perspective of an individual child, and instead thinks about making whole schools, or school systems, inclusive, then it is necessary to consider whether inclusion has inherent advantages as a model for school reform, beyond the documented benefits to students with disabilities. As is noted elsewhere here, there is considerable research that shows that the inclusive approach works not only in special education, but also in other areas of education. Progress has been made in incorporating inclusion into the schools, but much work remains before this effort achieves its full potential for serving all children.

Inclusion as an instructional model

Pull-out versus inclusive or whole school programming

Despite the trend toward inclusion for students with disabilities, many students with disabilities are still segregated from their peers. Thus, it appears that there are still many who believe that pull-out programmes or 'mainstreaming', where students spend part of their day in the special education class and part of their day in the general education class, are effective ways to teach students. However, a number of studies and papers, with implication for schools beyond just the special education area, describe the fallacy of this belief structure (Reschly 1984, Allington and Johnston 1986, Smith 1986, Wang *et al.* 1986). These writers note that pull-out programmes have long been criticized because of their fragmentation, overlapping and lack of coordination of curriculum content. The comment is sometimes made that these programmes meet only narrow, categorized needs and are rarely coordinated with each other or with the regular school operations (Wang 1998). The word 'disjointed' seems to capture the essence of many of these programmes (Wang *et al.* 1986).

In addition, other researchers (e.g. Wang *et al.* 1986, Gartner and Lipsky 1987, Wang 1988) have noted that pull-out approaches make the assumption that the problem lies with the student rather than in the instructional or learning environment. In other words, if one were using a medical analogy, it would be equivalent to reasoning illogically that since the hospital failed adequately to treat the patient's condition properly, there must be something wrong with the patient!

Providing support for the superiority of an inclusion strategy over a pull-out approach, several additional studies (Heller *et al.* 1982, Mayors's Commission on Special Education 1985, Allington and Johnston 1986, Wang *et al.* 1986), found that pull-out leads to discontinuity and interruption in instruction for both teachers and students, loss of control by school district leadership over specialized programmes, and narrow categorical attitudes and limited instructional programming. Jenkins *et al.* (1987) described pull-out programmes as creating a classroom that resembles 'a rail station, with arrivals, departures, groupings, regroupings—the teacher acting as a dispatcher and students travelling to different destinations' (p. 5).

Another powerful argument for an inclusion is the weakness of the classification system upon which student separation is often based. The inadequate classification system used is administratively burdensome and costly (Heller *et al.* 1982), inaccurate (Federal Register 1977, Bellamy and Danielson 1989), discriminatory (Heller *et al.* 1982), ineffective (Hobbs 1980) and counterproductive (Hobbs 1975).

Equally disturbing, other studies (Stanley and Greenwood 1983, Allington and Johnston 1986, Haynes and Jenkins 1986) have determined that pull-out can actually lead to a *reduction* in the amount of instructional time for students as is often supplants, rather than supplements, core curriculum instruction. In fact, Haynes and Jenkins (1986) found that children received twice as much reading instruction in the regular class as in the

resource room. By the time the students go to the resource room, get started and get back to the class in time, they not only have lost continuity in instruction, but also they have lost continuity in classroom membership.

Using rather strong language, Wang (1988) summarized the case against pull-out programmes; she said, in an *Education Week* article, that a substantial body of research showed that regular schooling was capable of meeting the learning needs of most students who are currently served in segregated programmes—programmes which are often intellectually dull and instructionally ineffective. She goes on to say that there are schools where excellent ongoing programmes for students with disabilities are based on regular education, and these programmes are being offered in regular education settings. Wang points out that if this concept is working in some schools, it means that this approach can probably work in most schools and that it should be replicated.

As a related point, one might legitimately wonder whether the whole issue of inclusion versus pull-out programmes is worthy of so much study and discussion. In fact, a key reason that this is such a crucial matter is that it has implications related to classroom management; if students with disabilities are a part of the regular classroom and the regular classroom teacher is not adequately prepared to work in an inclusive setting, classroom management is less likely to be effective (Slee and Cook 1994, Buswell *et al.* 1999). Likewise, if students with disabilities are pulled out for special classes, and their transition to and from the regular classroom is not skilfully managed, classroom management will also suffer from this circumstance; interestingly, classroom management has been shown to be a crucial determinant of student learning. Indeed, based on a comprehensive research synthesis (Wang *et al.* 1993b), that reviewed 11 000 studies done over 50 years, it appears that classroom management is one of the single most important determinants of classroom learning. In this study, which relied on content analysis, research synthesis and the survey of experts, other variables such as site-based management, state-level politics, district demographics, programme demographics and general school policies were found to be much less important to student learning. With these findings in mind, it seems that the significant amount of research on the inclusion issue is right on target as far as looking at a variable that has a huge effect on the fundamental purpose of schools—student achievement.

Membership

It is sometimes assumed that since so many students are pulled out of class during the school day for different instructional and other activities that this circumstance would be the norm. Hence, pull-out for students with disabilities would have little impact on the perceived membership of students in the classroom. However, research (Schnorr 1990, 1997, Fisher *et al.* 1998a, Williams and Downing 1998) indicates that this assumption is untrue. Schnorr described how first-grade Peter was perceived by his classroom peers; when questioned, the class members were even confused as to whether Peter was actually a real part of the class.

Several recent studies have also suggested that contact among students is a crucial factor as children develop attitudes toward their peers with disabilities (Kennedy and Itkonen 1994, Kishi and Meyer 1994, York and Tundidor 1995, Nabuzoka and Ronning 1997). Kishi and Meyer (1994) is of particular interest. They conducted a 6-year follow-up study of 183 students without disabilities regarding the interactions between students with and without significant disabilities. They found that a significant majority of students maintained a positive attitude about their classmate with a severe disability. The typical students recalled playing with their peers with severe disabilities and helping them in class. In fact, 63% of the boys and 55% of the girls indicated that they had maintained the friendship with their peer with a disability over the past 6 years. Additionally, in a meta-analysis of what matters in student achievement, Wang (1988) noted that of the most significant influences on student learning—classroom climate, defined as 'class members are friends sharing common interests and values'—was rated only behind student aptitude (cognitive as well as social and motivational), and classroom management in its influence on learning.

Schorr (1997) echoes this conclusion in her study of membership or 'belonging' in middle and high school classes. Schorr notes that the goal of class membership for students with disabilities is now becoming fairly broadly accepted. Her study looked at the issue of belonging in several different secondary classes that were attended by youngsters with moderate and severe disabilities in an urban school district. Data were collected through participant observations and semi-structured interviews during the second semester of one school year. Schorr saw several themes emerge. First, as viewed from the perspective of the student, class membership seemed to depend on belonging to one particular subgroup of peers in the classroom. Also, broader class participation and interactions happened across subgroups and had some influence on membership, but this alone was insufficient to create member status. Third, typical students noted that when they join a class, they made an intentional effort to connect with particular classmates or subgroups of students. Of six students in this study with a disability, only two were affiliated with any subgroup.

In looking for generalizations that emerge from Schorr's work, one can see that, indeed, the organization of schools can hinder the creation of peer relationships and the sense of belonging that develops with such relationships. Schorr notes that the risk of isolation is particularly high for students in special education due to their unique schedules, ever-changing classes and peer groups and exposure to multiple teachers during the school day.

Schorr also points out that the issue of belonging is not a trivial matter. She notes that in Chang (1992), students often reported that the reason they came to school was to socialize with their friends. Schorr observes that from students' perspective, having friends in their classes is a defining feature of the school experience—it is not something extra or supplemental. Cusick (1973) also found that students 'couldn't stand' to come to school when they did not have friends and that having few friends created significant anxieties for students entering new schools. In summary, then, having friends is perhaps more important to students than is commonly

understood. This situation would be true for all students, including those with disabilities. The capacity for the development of such friendships is jeopardized by programmes that fail to be inclusive and make students feel like a vital part of the classroom.

Ability grouping

Ability grouping, or tracking, is certainly used with special education, butthe model is also is widely used in public schools across the world for many other purposes than just special education; indeed, it is estimated that over 77% of all US schools use ability grouping of some type (Findley and Bryan 1975, Spencer and Allen 1988). The practice of ability grouping raises a number of crucial educational questions. For example, one must wonder about the correlation between track placement and race, language, class, gender and/or special education background when one sees the disproportionate numbers of poor and minority students in lower-ability classes (Raynolds 1994, Oakes and Lipton 1999). Does this practice of 'segregation' deny these students the chance to be a part of the mainstream of education?

Research shows that ability grouping tends to affect instructional pace in the classroom, often causing students in some tracks to receive a differentiated (and inferior) education compared with students in high-ability classrooms (Good and Brophy 1987, Allington and Baker 1999). Historically, students who demonstrated less academic success received less time on task, less complex curriculum, less effective instruction and less homework. In these classes, teachers were also more likely to accept disruptions and were less likely to ask students to think critically. Teachers in lower tracked classes tended to give directions less clearly and gave more criticism of students than in higher track classes. In contrast, the environment for students in untracked or heterogeneous classes looked more like high-track classes in terms of variables such as instruction, student behaviour, time on task, and achievement (Goodlad and Oakes 1988, Reutzel 1999).

Reporting on data from Massachusetts, Raynolds (1994) noted that students in lower level tracks were not expected to synthesize material or apply the content to problem situations; instead, the curriculum content had a recipe approach that de-emphasized higher level thinking. Raynolds also reports that lower level courses unnecessarily diluted course content and reduced the amount of individual work assigned.

Weisendanger and Birlen (1981) identified an additional problem with less inclusive tracking approaches to education. They noted that tracking and ability grouping exaggerate the initial differences between students, rather than accommodating them. Since students in lower-ability classes tend to receive lower-level instruction, the gap between what students learn and know in lower-ability classes and what students know and learn in average or higher-ability classes increases each year. Thus, by graduation, the knowledge gap has grown to be quite substantial if the tracking practice has continued throughout the student's education.

A non-inclusive, tracked education can also have a significant long range impact on a variety of students, not just students in special education (e.g. Flood *et al.* 1992). Raynolds (1994) noted that decisions about high school tracks are often made in late elementary school and seventh and eighth grades based on teacher or counsellor recommendations. These decisions have long-term impacts because lower level groupings are powerful predictors for dropping out of school and delinquent behaviour; these outcomes, in turn, highly correlate with one's income and occupational attainment.

Ability grouping in school also tends to serve as a form of segregation (Gartner and Lipsky 1987, Cuckle 1997). The discrimination occurs based on categories such as race, socio-economic background, gender, language and special education status. Students from racial and other minority groups are often placed in less demanding classes based on inaccurate information or assumptions (Oakes 1985, Oakes and Lipton 1999). Raynolds (1994) noted, for example, that teachers sometimes associate lack of proficiency in English with low academic ability, and therefore expect less from language minority students and do not provide them with access to the intellectual stimulation that is afforded to English-only speaking students.

The relationship of inclusion to ability grouping defies the intuitive assumption of many people who believe that having a variety of students in class makes teaching more difficult and limits or 'waters down' the curriculum. A large number of studies show that ability grouping or tracking does not enhance student achievement, but that it actually slows the academic progress of students in low- and middle-ability groupings (e.g. Jorgensen 1998). Some studies have shown that only those in the highest ability groups had increases in their academic performance (Cotton and Savard 1981, Kulik and Kulik 1982, Rowan and Miracle 1983, Oakes 1985, Featherstone 1987, Slavin 1987).

Other studies have found that expectations are higher and instructional practices are more effective in higher track classes (Rist 1970, Oakes 1985, Good and Brophy 1987). Still other evidence shows that ability grouping and tracking widens the achievement and knowledge gap between students (Rist 1970, Weisendanger and Birlen 1981). And, finally, research shows that low-ability-grouped students, including those in special education classes, have lower self-esteem and expectations as well as the social stigma of being less smart (Vanfossen *et al.* 1987).

To summarize this section the general education literature is replete with examples of the ill effects of ability grouping on a wide range of children, including students with disabilities.

How inclusion affects student achievement and other student outcomes

Because student learning is the central purpose of schooling, it is important to know what research says about the relationship of inclusion to student achievement. In 1987, Gartner and Lipsky asserted that there was no sig-

nificant evidence to show that separate special education programmes offer any significant benefits for students in special education. On the contrary, they noted that the results seem to point in the opposite direction; in looking at 50 studies, comparing the academic performance of mainstreamed and segregated students with disabilities, they found that the average academic achievement of the integrated group was in the 80th percentile, while the students who were segregated by disability scored in the 50th percentile. Hunt *et al*. (1994) investigated achievement by all students in cooperative learning groups. Students with or without disabilities in this study were not negatively impacted in terms of the academic objectives. In addition, they found that typical students performed as well as members of a control group within the classroom that did not include a child with severe disabilities. These results are consistent with other emerging literature suggesting that high and average achievers gain from cooperative learning just as do students who are not achieving as well as their peers (e.g. Stevens and Slavin 1995).

Baker *et al*. (1995) reported on three meta-analyses that found a small-to-moderate beneficial effect of inclusive education on the academic outcomes of special education youngsters. Moreover, they say that there is considerable evidence over the last 15 years to suggest that segregation of students in special education in separate classes is actually deleterious to their learning and that students in special education generally perform better on average in a regular classroom.

Sharpe *et al*. (1994) conducted a pre-/post-test study to analyse the academic performance of general education students who attended elementary school in a rural, east central Minnesota school district. Academic performance was measured by grades on report cards in the areas of reading, mathematics and spelling, as well as conduct and effort. The results indicated that there were not significant differences in the academic or behavioural performance between classes that included a child who experienced significant disabilities and classes that did not. Other studies reported positive parental perceptions especially when comparing academic outcomes before and after inclusion (Ryndak *et al*. 1995, Gibb *et al*. 1997, Fisher *et al*. 1998b, Jenkinson 1998). Ryndak *et al*. (1995) reported that these parents attributed their children's increased acquisition of academic skills to their participation into general education classes.

In their study of cooperative learning, Stevens and Slavin (1995) analysed the data from 76 students identified as learning disabled. Forty of the students received their education in general education classrooms, with the special education supports and services being provided during cooperative learning groups. Thirty-six of them received their education in traditional service delivery models (not general education classes) and 'did not use an in-class model for mainstreaming special education students' (p. 330). This study demonstrated significant differences between the two groups. The students with disabilities who were in general education, cooperative learning schools, had more significant growth in language and math scores when compared with students who were in self-contained classrooms.

School personnel, parents and students have observed significant improvement in the area of communication skills for students with disabilities who experience full-time placement in inclusive settings (Carter and Maxwell 1998, Park 1998). One case study focused on a student with severe disabilities who participated in general education classes at an inclusive high school. This research provided an in-depth look at the changes that were prompted by a shift in placement from a segregated to an inclusive setting. Through multiple sources including records, interviews and observations, the results demonstrated marked improvement in the areas of academics, socialization, and communication. Bagg-Rizzo (1999) concluded that the student's communication skills improved significantly due to her participation in general education classes. Bagg-Rizzo continued noting that extensive verbal modelling and reciprocal interactions played a vital role in her language development. The student's progress was highlighted by the following comments made by the inclusion support teacher: 'She has become more verbal in class, her tone of voice has increased without prompting ... she interacts with her peers in class on a social and academic basis' (p. 10).

Unfortunately, as Hunt and Goetz (1997) noted, surprisingly few studies have investigated the effect of inclusion on the academic achievement of students with disabilities. They speculate that one reason for the paucity of studies could be that inclusion was initiated based on concerns related to constitutional rights, legal precedents and ethical considerations, and not on theories of learning or research on good teaching. An additional problem is that a number of the studies that do exist are conducted with very small sample sizes making generalization dangerous. Thus, firm conclusions are not as easy to find as one would hope.

Another important student outcome is the kind of behaviour that students learn from classmates. Staub and Peck (1995) noted that observations of young children in inclusive classrooms suggest that youngsters seldom learn undesirable behaviour from students with disabilities. They also cite research showing this same finding when surveys were done with parents and teachers. However, researchers are quick to note that better research is needed to confirm such findings. For example, McGregor (1993), in her comprehensive literature review, noted that there are major problems in drawing conclusion about inclusion due to the lack of carefully defined models to study. She notes that there is no single source that lays out an approach to implementation that is universally followed by schools that adopt an inclusive approach to service delivery.

A different kind of student outcome variable that has been studied is the fear or discomfort with human differences (Nabuzoka and Ronning 1997, Fisher *et al.* 1998a). Staub and Peck (1995) reported on surveys showing that students often attributed their reduced fear of people who looked or behaved different to having had some interactions with people with disabilities. These authors also cite similar results based on student comments and on parental observations of their children; some students even reported that they felt more accepting of others and valued the contributions of all individuals after more exposure to students in special education.

Growth in social cognition is another interesting student outcome that appears to be influenced by the inclusive classroom setting. Murray-Seegert (1989), in a yearlong study at an inclusive high school, found that non-disabled students tended to be more tolerant of others when they became more aware of the needs of their fellow students with disabilities. She also found that these students had more positive feelings about themselves following their experience of helping classmates who had severe disabilities. Staub and Peck (1995) noted that other studies have found similar results among elementary school children who learn skills in the inclusive classroom that enable them to communicate more effectively with their disabled peers and to be more supportive of them in daily interactions.

An additional student outcome that has been examined in terms of its relationship to inclusion is the self-concept of non-disabled students. Several researchers (Voeltz and Brennan 1983, Peck *et al.* 1990) have found that many non-disabled students experience growth in self-esteem as a result of their relationships with individuals with disabilities. Staub and Peck (1995) provided the following quotation from a typical high school student, who served as a peer tutor for a school-mate with severe disabilities: 'Yeah, it's kind of rewarding if she [a student with disabilities] makes progress—you feel good about yourself because you've helped her to do it. I like that' (p. 38).

Staub and Peck (1995) also summarized research that addresses the development of personal principles on the part of non-disabled students and how they are shaped by exposure to an inclusive classroom setting. They note that many non-disabled students experience a growth in commitment to personal moral and ethical principles as a result of their relationships with students with disabilities. Further, they note that parents have reported that their children show less prejudice toward people who behave or look different from themselves. It is assumed that this development of personal principles came from an increased responsiveness on the part of non-disabled students toward the needs of others. Some students have even become advocates for their friends with disabilities.

Although the research on the relationship between inclusion and student achievement and other student outcomes is limited (e.g. Wagner 1993), the trend seems to show that inclusion has benefits for students in special education. In addition, inclusive programmes seem to do no harm to non-disabled students and, indeed, seem to have some significant benefits in terms of self-concept and related outcomes. It may be, as Noddings (1984) contends, that the growth and development of all students is enhanced by the degree to which they feel a sense of belonging, caring and community in school.

Reflections on the research

The ultimate issue of concern is whether programmes such as special education provide the best possible instruction for children and enable educators to provide their services with optimal effectiveness and efficiency

(Lipsky and Gartner 1997). Based on the various reports and studies described here, many of which go beyond the traditional special education literature, there is strong evidence to suggest that the inclusive approach, as defined earlier, has much to offer in improving the outcomes of students with disabilities. Special education research appears consistent with research in other areas such as school reform and student tracking. All point to a unified system of reform—focused on consistent sets of expectations for all students delivered in diverse environments where students learn tolerance as well as academic content.

Many of the principles that underlie school reform and restructuring are also the same necessary prerequisites of a framework for inclusive education (Bannister *et al.* 1998, Roach 1999). Restructured schools focus on the needs of each student rather than simply viewing curriculum coverage as paramount (Mackey and McQueen 1998). Schools with model inclusion programmes are fundamentally different in terms of their special education structures. For example, model inclusive schools, through their normal instructional practices, create environments that require less specific instructional adaptation. In other words, a focus is placed on beginning with a lesson as prepared, and making only minimal accommodations as required. This approach stands in contrast to more traditional special education instruction that assumes the need for abnormality, adaptation and special services (Hitzing 1980, Peresuh and Barcham 1998).

As was noted in the discussion on mainstreaming and tracking, there are serious problems with the use of tracking, and once students are placed in a special education track, they are much less likely to ever re-enter the regular classroom (Cuckle 1997). And, unfortunately, a large percentage of students with disabilities are assigned outside the regular classroom. For example, Sansone and Zigmond (1986) cite research in a large urban school district showing that more than 90% of elementary students with learning disabilities were *never* assigned to regular classrooms.

As noted by Baker *et al.* (1995), parents, legal experts and others are demanding that schools address the scientific and legal basis for segregated education. Thus, the concern is not so much whether to provide inclusive education, but how to implement inclusive education in an effective and efficient way. As a corollary to this special education movement, general education reformers also doubt the wisdom of pull-out or separate programming for other student populations who have not traditionally fared well in school. Since the early 1990s, educators, policy-makers and communities have worked to institute standards-based reforms to mitigate against tracking, low expectations for students and poor student outcomes. More recently, whole school reforms have been promoted to create a total school environment focused on student achievement and reduce fiscal inefficiencies based on categorical programming. In both cases preliminary data show increases in student achievement. Inclusive programming is whole school reform, not just a student placement issue—it recognizes the range of student diversity that exist in schools today, rather than creating dichotomies that have weak scientific and legal bases. But saying that research supports a move to fully implement the inclusive model, does not mean that the journey will be smooth or easy (Stainback and Stainback

1996). There are entrenched laws, policies, funding structures and political systems that act to perpetuate the status quo (Ellger-Ruttgardt 1995, Peresuh and Barcham 1998, Mamlin 1999).

Finally, perhaps more important than the research supporting inclusion, as noted by Fisher *et al*. (1998b), parents are likely to prefer a more unified (inclusive), system of education that makes the child feel like a genuine member of the classroom. In the end, this preference may eventually institutionalize inclusion more than any research data ever could (Fisher *et al*. 1998b).

Acknowledgements

Preparation of this paper was supported through funding by the US Department of Education, Grant H086V40007. The content and opinions expressed herein do not necessarily reflect the position or policy of the US Department of Education and no official endorsement should be inferred.

References

Allington, R. L. and Baker, K. (1999) Best practices in literacy instruction for children with special needs. In L. B. Gambrell, L. M. Morrow, S. B. Neuman and M. Pressley (eds), *Best Practices in Literacy Instruction* (New York: Garland), 292–310.

Allington, R. L. and Johnston, P. (1986) The coordination among regular classroom reading programs and targeted support programs. In B. I. Williams, P. A. Richmond and B. J. Mason (eds), *Designs for Compensatory Education Conference Proceedings and Papers* (Washington, DC: Research and Evaluation Associates), 3–40.

Bagg-Rizzo, E. (1999) Portraits of inclusion. In D. Fisher, C. Sax and I. Pumpian (eds), *Inclusive High Schools: Learning from Contemporary Classrooms* (Baltimore: Paul H. Brookes), 43–52.

Baker, E. T., Wang, M. C. and Walberg, H. J. (1994–95) The effects of inclusion on learning. *Educational Leadership*, **52**, 33–36.

Bannister, C., Sharland, V., Walker, D., Upton, V. and Thomas, G. (1998) Changing from a special school to an inclusive service. *British Journal of Special Education*, **25**, 65–69.

Bellamy, G. T. and Danielson, L. C. (1989) State variation in placement of children with handicaps in segregated environments. *Exceptional Children*, **55**, 448–462.

Buswell, B. E., Schaffner, C. B., Jackson, L. B. and Schiappacasse, J. (1999) Behavior: strategies, supports and structures. In B. E. Buswell, C. B. Schaffner and A B. Seyler (eds), *Opening Doors: Connecting Students to Curriculum, Classmates, and Learning*, 2nd edn (Colorado Springs: PEAK Parent Center), 41–47.

Carter, M. and Maxwell, K. (1998) Promoting interaction with children using augmentative communication through a peer-directed intervention. *International Journal of Disability, Development, and Education*, **45**, 75–96.

Chang, H. (1992) *Adolescent Life and Ethos: An Ethnography of a U.S. High School* (Washington, DC: Falmer).

Cotton, K. and Savard, W. (1981) *Instructional Grouping: Ability Grouping*. Topic Summary Report, Research on School Effectiveness Project (Portland: Northwest Regional Educational Laboratory).

Cuckle, P. (1997) The school placement of pupils with Down's syndrome in England and Wales. *British Journal of Special Education*, **24**, 175–179.

Cusick, P. (1973) *Inside High School: The Students' World* (New York: Hold, Rinehart & Winston).

Ellger-Ruttgardt, S. (1995) Special education in Germany. *European Journal of Special Needs Education*, **10**, 75–91.

Featherstone, H. (1987) Organizing classes by ability. *Harvard Education Letter*, **3**, 1–4.

Federal Register (1977, August 23) *Regulations for Implementing the Education for All Handicapped Children Act of 1975 (Public Law 94–142)*, **42**, 747–482, 518.

Findley, W. and Bryan, M. (1975) *The Pros and Cons of Ability Grouping* (Bloomington: Phi Delta Kappa Education Foundation).

Fisher, D., Pumpian, I. and Sax, C. (1998a) High school students attitudes about and recommendations for their peers with significant disabilities. *Journal of the Association for Persons with Severe Handicaps*, **23**, 272–282.

Fisher, D., Pumpian, I. and Sax, C. (1998b) Parent and careproviders impressions of different educational models. *Remedial and Special Education*, **19**, 173–180.

Fisher, D., Sax, C. and Grove, K. (2000) The resilience of changes promoting inclusiveness in an urban elementary school. *Elementary School Journal*, **110**, 213–227.

Flood, D., Lapp, D., Flood, S. and Nagel, G. (1992) Am I allowed to group? Using flexible patterns for effective instruction. *Reading Teacher*, **45**, 608–616.

Gartner, A. and Lipsky, D. K. (1987) Beyond special education: toward a quality system for all students. *Harvard Educational Review*, **57**, 367–395.

Gibb, G. S., Young, J. R., Allred, K. W., Dyches, T. T., Egan, M. W. and Ingram, C. F. (1997) A team-based junior high inclusion program: Parent perceptions and feedback. *Remedial and Special Education*, **18**, 243–249.

Good, T. L. and Brophy, J. E. (1987) *Looking in Classrooms* (New York: Harper & Row).

Goodlad, J. I. and Oakes, J. (1986) *The High School Experience in Massachusetts* (Quincy: Bureau of Research and Assessment, Massachusetts State Department of Education).

Harrison, J. (1998) Improving learning opportunities in mainstream secondary schools and colleges for students on the autistic spectrum. *British Journal of Special Education*, **25**, 179–183.

Haynes, M. C. and Jenkins. J. R. (1986) Reading instruction in special education resource rooms. *American Educational Research Journal*, **23**, 161–190.

Heller, K. W., Holtzman, W. and Messick, S. (eds) (1982) *Placing Children in Special Education: A Strategy for Equity* (Washington, DC: National Academy of Sciences Press).

Hitzing, W. (1980) ENCOR and beyond. In T. Appolloni, J. Cappuccilli and T. F. Cooke (eds), *Towards Excellence: Achievements in Residential Services for Persons with Disabilities* (Baltimore: University Park), 24–40.

Hobbs, N. (ed.) (1975) *Futures of Children* (San Francisco: Jossey-Bass).

Hobbs, N. (1980) An ecologically oriented service-based system for the classification of handicapped children. In S. Salzinger, J. Antrobus and J. Glick (eds), *The Eco-system of the 'Sick' Child: Implications for Classification and Interventions for Disturbed and Mentally Retarded Children* (New York: Academic Press).

Hunt, P. and Goetz, L. (1997) Research on inclusive educational programs, practices, and outcomes for students with severe disabilities. *Journal of Special Education*, **3**, 3–29.

Hunt, P., Staub, D., Alwell, M. and Goetz, L. (1994) Achievement by all students within the context of cooperative learning groups. *Journal of the Association for Persons with Severe Handicaps*, **19**, 290–301.

Jenkinson, J. (1998) Parent choice in the education of students with disabilities. *International Journal of Disability, Development, and Education*, **45**, 189–202.

Jorgensen, C. (ed.) (1998) *Restructuring High Schools for all Students: Taking Inclusion to the Next Level* (Baltimore: Paul H. Brookes).

Kennedy, C. H. and Itkonen, T. (1994) Some effects of regular class participation on the social contacts and social networks of high school students with severe disabilities. *Journal of the Association for Persons with Severe Handicaps*, **19**, 1–10.

Kishi, G. S. and Meyer, L. H. (1994) What children report and remember: a six-year follow-up of the effects of social contact between peers with and without severe disabilities. *Journal of the Association for Persons with Severe Handicaps*, **19**, 277–289.

Kulik, C. and Kulik, J. (1982) Effects of ability grouping on secondary school students: a meta-analysis of evaluation findings. *American Educational Research Journal*, **19**, 415–428.

Lipsky, D. K. and Gartner, A. (1997) *Inclusion and School Reform: Transforming America's Classrooms* (Baltimore: Paul H. Brookes).

Mackey, S. and McQueen, J. (1998) Exploring the association between integrated therapy and inclusive education. *British Journal of Special Education*, **25**, 22–27.

Mamlin, N. (1999) Despite best intentions: when inclusion fails. *Journal of Special Education*, **33**, 36–49.

McGregor, G. (1993) Inclusion: a powerful pedagogy. a look at the research base. *Front Line*, **2**, 7–10.

McGregor, G. and Vogelsberg, R. T. (1998) *Inclusive Schooling Practices: Pedagogical and Research Foundations* (Baltimore: Paul H. Brookes).

Murray-Seegert, C. (1989) *Nasty Girls, Thugs, and Humans Like Us: Social Relations Between Severely Disabled and Nondisabled Students in High School* (Baltimore: Paul H. Brookes).

Nabuzoka, D. and Ronning, J. (1997) Social acceptance of children with intellectual disabilities in an integrated school setting in Zambia: a pilot study. *International Journal of Disability, Development, and Education*, **44**, 105–115.

National Association of State Boards of Education (1992) *Winners All: A Call for Inclusive Schools* (Alexandria: NASBE).

Noddings, N. (1984) *Caring: A Feminine Approach to Ethics and Moral Education* (Berkeley: University of California Press).

Oakes, J. (1985) *Keeping Track: How Schools Structure Inequality* (New Haven and London: Yale University Press).

Oakes, J. and Lipton, M. (1999) *Teaching to Change the World* (New York: McGraw-Hill).

Park, K. (1998) Dickens for all: inclusive approaches to literature and communication for people with severe and profound learning disabilities. *British Journal of Special Education*, **25**, 114–118.

Peck, C. A., Donaldson, J. and Pezzoli, M. (1990) Some benefits adolescents perceive for themselves from their social relationships with peers who have severe handicaps. *Journal of the Association for Persons with Severe Handicaps*, **15**, 241–249.

Peresuh, M. and Barcham, L. (1998) Special education provision in Zimbabwe. *British Journal of Special Education*, **25**, 75–80.

Raynolds, H. (1994) *Structuring Schools for Student Success: A Focus on Ability Grouping* (Boston: Massachusetts Department of Education).

Reschly, D. J. (1984) Beyond IQ test bias: the National Academy Panel's analysis of minority EMR over representation. *Educational Researcher*, **13**, 15–19.

Reutzel, D. R. (1999) Organizing literacy instruction: effective grouping strategies and organizational plans. In L. B. Gambrell, L. M. Morrow, S. B. Neuman and M. Pressley (eds), *Best Practices in Literacy Instruction* (New York: Garland), 271–291.

Rist, R. (1970) Social class and teacher expectations: the self fulfilling prophecy in ghetto education. *Harvard Education Review*, **49**, 411–451.

Roach, V. (1999) Curriculum, instruction, placement: three legs of the achievement stool. In D. Fisher, C. Sax and I. Pumpian (eds), *Inclusion High Schools: Learning from Contemporary Classrooms* (Baltimore: Paul H. Brookes), 145–156.

Rogers, J. (1993) The inclusion revolution. *Phi Delta Kappa Research Bulletin*, **11**, 1–6.

Rowan, B. and Miracle, A. (1983) Systems of ability grouping and the stratification of achievement in elementary schools. *Sociology of Education*, **26**, 133–144.

Ryndak, D. L., Downing, J. E., Jacqueline, L. R. and Morrison, A. P. (1995) Parents' perceptions after inclusion of their children with moderate or severe disabilities. *Journal of the Association for Persons with Severe Handicaps*, **20**, 147–157.

Sansone, J. and Zigmond, N. (1986) Evaluating mainstreaming through an analysis of student schedules. *Exceptional Children*, **52**, 452–458.

Schnorr, R. F. (1990) 'Peter? He comes and goes ...' : first graders' perspectives on a part-time mainstream student. *Journal of the Association for Persons with Severe Handicaps*, **15**, 231–240.

Schorr, R. F. (1997) From enrollment to membership: 'belonging' in middle and high school classes. *Journal of the Association of Persons with Severe Handicaps*, **22**, 1–15.

Sharpe, M., York, J. and Knight, J. (1994) Effects of inclusion on the academic performance of classmates without disabilities: a preliminary study. *Remedial and Special Education*, **15**, 281–87.

Slavin, R. E. (1987) Ability grouping and student achievement in elementary grades: a best-evidence synthesis. *Review of Educational Research*, **57**, 293–336.

Slee, R. (1997) Inclusion or assimilation? Sociological explorations of the foundations of theories of special education. *Educational Foundations*, **11**, 55–71.

Slee, R. and Cook, S. (1994) Creating cultures of disabilities to control young people in Australian schools. *Urban Review*, **26**, 15–23.

Smith, M. S. (1986) Selecting students and services for Chapter 1: Reactions. In B. I. Williams, P. A. Richmond and B. J. Mason (eds), *Designs for Compensatory Education: Conference Proceedings and Papers* (Washington, DC: Research and Evaluation Associates), II, 71–98.

Spencer, C. and Allen, M. (1988) *Grouping students by ability: A review of the literature*. ERIC Document Number ED302326.

Stainback, S. and Stainback, W. (1996) *Inclusion: A Guide for Educators* (Baltimore: Paul H. Brookes).

Stanley, S. O. and Greenwood, C. R. (1983) How much 'opportunity to respond' does the minority disadvantaged student receive in school? *Exceptional Children*, **49**, 370–373.

Staub, D. and Peck, C. (1995) What are the outcomes for nondisabled students. *Educational Leadership*, **52**, 36–40.

Stevens, R. J. and Slavin, R. E. (1995) The cooperative elementary school: effects on students' achievement, attitudes, and social relations. *American Education Research Journal*, **32**, 321–351.

SRI International (1991) *National Longitudinal Transition Study of Special Education Students* (Menlo Park: SRI).

Vanfossen, B. E., Jones, J. D. and Spade, J. Z. (1987) Curriculum tracking and status maintenance. *Sociology of Education*, **60**, 104–122.

Voeltz, L. M. and Brennan, J. (1983) Analysis of the interactions between nonhandicapped and severely handicapped peers using multiple measures. In J. M. Berg (ed.), *Perspectives and Progress in Mental Retardation, Chapter VI: Social Psychology and Educational Aspects* (Baltimore: University Park Press).

Wagner, M. (1993) *The Transition Experiences of Young People with Disabilities: A Summary of Findings from the National Longitudinal Transition Study of Special Education Students* (Menlo Park: SRI). [ERIC Document Record # EC302815]

Wang, M. C. (1988) A 'promising approach' for reforming special education. *Education Week*, **36**, 28.

Wang, M. C., Haertel, G. D. and Walberg, H. J. (1993a) What helps students learn? *Educational Leadership*, **51**, 74–79.

Wang, M. C., Haertel, G. D. and Walberg, H. J. (1993b) Toward a knowledge base for school learning. *Review of Educational Research*, **63**, 249–294.

Wang, M. C., Reynolds, M. C. and Walburg. H. J. (1986) Rethinking special education. *Educational Leadership*, **44**, 26–31.

Weisendanger, K. and Birlen, E. (1981) A critical look at the reading approaches and grouping currently used in the primary grades. *Reading Horizons*, **22**, 54–58.

Williams, L. J. and Downing, J. E. (1998) Membership and belonging in inclusive classrooms: What do middle school students have to say? *Journal of the Association for Persons with Severe Handicaps*, **23**, 98–110.

York, J. and Tundidor, M. (1995) Issues raised in the name of inclusion: Perspectives of educators, parents, and students. *Journal of the Association for Persons with Severe Handicaps*, **20**, 31–44.