

Educational Psychology and Effectiveness of Inclusive Education/Mainstreaming

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ABSTRACT

Background. Inclusive education/mainstreaming is a key policy objective for the education of children and young people with special educational needs (SEN) and disabilities. Aims. This paper reviews the literature on the effectiveness of inclusive education/mainstreaming. The focus is on evidence for effects in terms of child outcomes with examination also of evidence on processes that support effectiveness. Samples. The review covers a range of SEN and children from pre-school to the end of compulsory education. **Method.** Following an historical review of evidence on inclusive education/mainstreaming, the core of the paper is a detailed examination of all the papers published in eight journals from the field of special education published 2001-2005 (N = 1373): Journal of Special Education, Exceptional Children, Learning Disabilities Research and Practice, Journal of Learning Disabilities, Remedial and Special Education, British Journal of Special Education, European Journal of Special Needs Education, and the International Journal of Inclusive Education. The derived categories were: comparative studies of outcomes; other outcome studies; non-comparative qualitative studies including non-experimental case studies; teacher practice and development; teacher attitudes; and the use of teaching assistants. Results. Only 14 papers (1.0%) were identified as comparative outcome studies of children with some form of SEN. Measures used varied but included social as well as educational outcomes. Other papers included qualitative studies of inclusive practice, some of which used a non-comparative case study design while others were based on respondent's judgements, or explored process factors including teacher attitudes and the use of teaching assistants. Conclusions. Inclusive education/mainstreaming has been promoted on two bases: the rights of children to be included in mainstream education and the proposition that inclusive education is more effective. This review focuses on the latter issue.

Keywords: Education, Mainstreaming, Inclusive Education

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The evidence from this review does not provide a clear endorsement for the positive effects of inclusion. There is a lack of evidence from appropriate studies and, where evidence does exist, the balance was only marginally positive. It is argued that the policy has been driven by a concern for children's rights. The important task now is to research more thoroughly the mediators and moderators that support the optimal education for children with SEN and disabilities and, as a consequence, develop an evidence-based approach to these children's education. Inclusive education/mainstreaming is a key policy in a number of countries, including the UK and US. In the UK, the New Labour Government addressed the issue through its Green Paper (Department for Education and Employment, 1997) within months of taking office. Policy developments have taken place with inclusion at their centre in England and Wales and within the separate legislative framework for Scotland (Department for Education and Skills (DfES) 2001a, 2001b; Special Education Needs and Disability Act 2001; Standards in Scotland's Schools Act 2000) and in the US (The Education for All Handicapped Pupils Act (PL-94-142) and Individuals with Disabilities Education Act (PL99-457)). A major driver has been concern that children's rights are compromised by special education, segregated from typically developing peers and the mainstream curriculum and educational practices. This position concerning rights and the values that underlie them is important but primarily sets out what proponents believe should be the case. A separate issue concerns the relative effectiveness of different educational approaches. This rests on empirical evidence rather than values and ideologies, although it is acknowledged that these issues interact. It is not argued that educational psychology is 'value free' but rather that it is important to separate discussion of rights and values from that of effectiveness. Given the very clear international policy imperative, it is reasonable to ask: to what extent is the development of inclusive education evidence-based? Educational psychology can contribute to the conceptualization of the nature, appropriateness and effectiveness of education for children with disabilities and special educational needs (SEN). The present paper focuses on the latter and the role of educational psychology in providing evidence regarding educational practice with particular reference to inclusive education/mainstreaming. It is important to recognize that research evidence is only one factor in policy formulation. Politics is also about values and ideology, and indeed about expediency and the art of the possible. Values provide a second pillar along with research evidence that might reasonably be considered to support policies concerning the education of children and young people with disabilities and SEN. Hence both evidence for differential effectiveness of processes and outcomes, and compliance with the values and aspirations of society are factors in policy development, including the determination of children's rights (Lindsay, 2003). Evidence from many writers in favour of inclusion, however, suggests their interest is only in terms of the rights position and that research evidence is considered at best not central to such considerations or even irrelevant (Booth, 1996; Rustemier, 2002). Research evidence to the contrary, perhaps showing negative effects of inclusion, may be rejected not as a scientific argument but because such evidence cannot be used as the basis for what ought to be. Poor outcomes may be found but, it is argued, these should drive us to greater efforts to discover how to implement a policy seen as inherently correct. For a trenchant criticism of ideologically driven positions see Kavale and Mostert (2003). The focus of this paper is not policy analysis rather an examination of the evidence for the effectiveness of inclusive education. However, the tensions between rights- and evidence-based policies will be considered.

Methodological issues

The evaluation of the effectiveness of inclusion presents the researcher with substantial challenges. It is comparable in scale and potential impact to the very large educational interventions noted by Pressley, Graham, and Harris (2006), which comprise thousands of smaller interventions many of which are prerequisite to later interventions. This is a rational approach to major educational interventions. However, this magnitude of scale is associated with diversity of approach and so examination of studies of the effectiveness of inclusive education requires consideration of a number of methodological issues including terminology, the nature of interventions and research methods.

Terminology

The variation in terminology across time and countries poses a challenge for exploring comparability of studies whereas from a medical perspective the ICD-10 and DSM-IV classificatory systems provide standardized diagnostic criteria, which reduce variation. In this paper, UK terminology will be generally used. The generic term SEN has been widely used in the UK for nearly 30 years to cover all children who have developmental difficulties that affect: their learning; their behavioural, emotional and social development; their communication; and their ability to care for themselves and gain independence. It was intended to replace disability categories (Department for Education and Science, 1978) but these have continued to be used, even if they have changed. The 11 categories of the 1945 Regulations have been reduced to four categories in the SEN Code of Practice (DfES, 2001a) although a larger set of 12 categories (plus Other) is also used by the DfES in collecting data for the Pupil Level Annual School Census (PLASC). There is inconsistency over time (e.g. 'educational subnormality' was not used after the 1970s, to a large extent replaced by 'moderate learning difficulties'); between constituent counties in the UK (e.g. England: Behavioural, emotional and social difficulties, BESD; Scotland: Social, emotional and behavioural difficulties, SEBD); between education and health services (e.g. learning difficulties or learning disabilities); between practitioners (e.g. specific language impairment or specific speech and language difficulties: Dockrell, Lindsay, Mackie, & Letchford, 2006); and between the UK and the US and other countries (e.g. the US term specific learning disabilities is comparable to the UK specific learning difficulties). While some of these difficulties may be minor, others reflect different sensitivities, e.g. the term 'subnormal', or conceptual frameworks. For example, the earlier extensive use of measures of cognitive ability (e.g. IQ) has reduced in the UK as exemplified by the SEN Code of Practice criteria for identifying learning and cognition needs, although they continue to be used by local authorities in the SEN identification procedures (Norwich & Kelly, 2005). The terms 'inclusion' or 'inclusive education' have largely replaced 'integration' and are intended to represent a different concept; 'integration' may be seen as a child adapting to a host setting (typically a school) while 'inclusion' may refer to the host adapting in order to meet the needs of actual (and potential) pupils. However, this distinction is not always clear in practice. Some argue that the change in terminology reflects a shift from a needs-based to a rights-based agenda, or that integration may be seen as politically neutral and a form of service delivery while inclusion has a strong ideological element (Pirrie, Head, & Brna, 2006). The term 'mainstreaming' has continued to be used by others, especially in the US, although inclusion is becoming more common internationally. Each of these terms is used to refer to a range of practices.

Interventions

There are difficulties in defining interventions with respect to location. Much of the debate on inclusion concerns the difference(s) between mainstream compared with special schools, or

mainstream classes versus special classes. Mainstream schools are not homogeneous; they vary greatly in their social mix, levels of achievement and behavioural ethos (Office of Her Majesty's Chief Inspector, 2005). Within both the US and the UK, for example, there has been a broadening of types of individual mainstream schools (e.g. US: Charter schools; UK: Academies and specialist schools) with different policies on admissions even within a broad concept of comprehensive schooling. Grouping of schools building upon earlier networks and clusters to form partnerships and federations has also occurred. These arrangements may be 'soft', largely by agreements that are relatively informal, through to 'hard' federations which may have different forms of governance and management, such as a single governing body and/or an executive head teacher for more than one school (Lindsay et al., in press). With a focus on SEN, schools might individually or as a group, develop specialist, enhanced provision for pupils with SEN. These have varying names including Units, Integrated Resources and Designated Special Provision, and more importantly may operate in different ways, for example staffing numbers and expertise, nature of pupils and severity of SEN. The difficulty in defining a 'mainstream' school is therefore significant (Pirrie et al., 2006).

Research methods and analysis

The last variable to be considered here concerns the nature of the evaluative research. There has been substantial and often trenchant criticism of educational research in the UK (Hillage, Pearson, Anderson, & Tamkin, 1998; Tooley & Darby, 1998). These critiques addressed both policy relevance and the quality of studies. Although the latter in particular was itself subject to critical commentary from the research community, the point here is that both were funded by government agencies (the DfES and Ofsted, respectively) because of concerns about the nature and usefulness of educational research. The debate has also been strong in the US, with promotion of the need for better research (National Research Council, 2002) and promotion of experimental research and the use of Randomized Control Trials (RCT) (Gersten et al., 2005). In addition to debate about education research in general there has been particular discussion of research in special education (Graham, 2005). These concerns reflect a number of debates but the focus here is on appropriate methods to enable evaluation of the effectiveness of interventions. RCTs are often proposed as a 'gold standard' as random allocation, experimental manipulation and valid comparisons of treatments provide the best evidence of causal relationships between intervention and outcome (National Research Council, 2002; What Works Clearinghouse, 2006). However, attaining true randomization and true control (comparison) group design is often highly problematic. In a study of reading and maths interventions, Seethaler and Fuchs (2005) found only 34 of 806 relevant articles in five journals (4.22%) used random allocation, indicating a 'drop in the bucket' in terms of evidence based on this method. Their study reinforces an early analysis by Gersten, Baker, Smith-Johnson, Flogo, and Hagan-Burke (2004), which found a significant reduction in the proportion of experimental research in the US funded for the two-year period of 1997–1998 compared with 1987–1988. Hence, while promoted as a method of choice, RCTs are relatively rare in educational research. They are most suitable for providing evidence on outcomes not processes. Examination of processes is also necessary particularly when these are complex or not well understood. A number of researchers have also argued the benefits of other methodologies (National Research Council, 2002; Odom et al., 2005): rigorous correlation studies (Thompson, Diamond, McWilliam, Snyder, & Snyder, 2005), wellconstructed single-subject designs (Horner et al., 2005) and sound qualitative studies (Brantlinger, Jiminez, Klingner, Pugach, & Richardson, 2005). The National Reading Panel's (2000) decision not to include qualitative or single-case studies in their review of effective methods of teaching reading, nor to argue for the benefits of studying an educational intervention using a variety of methodologies, has been criticized (Pressley et al., 2006). The

development of quality standards has been promoted as a more relevant approach rather than adherence to one particular method especially one which is very difficult to implement successfully in educational research (Gersten, Baker, & Lloyd, 2000; Gersten et al., 2005). Longitudinal studies using triangulated data sources can also provide important information relevant to inclusive education. Dockrell, Lindsay, Palikara, and Cullen (in press), in a study of children with specific language and communication needs between 8 and 17 years, report changes in educational provision (mainstream and special) experienced by a substantial proportion of the young people as well as a lack of evidence for the superiority of either inclusive or special provision. The present paper adopts a broad approach to evaluation and hence to the types of studies considered.

Evaluating the effectiveness of inclusive education

Examining to what degree, or even whether, an intervention described as inclusive education or mainstreaming may be considered effective is complicated by variations with respect to participants (the range of SEN types, severity, persistence and comorbidity), intervention definition (contextual factors, nature of the intervention) and the type of evaluative method (e.g. RCTs, correlational research, meta-analyses and single-study design). A formidable set of issues has been revealed for researchers, yet these must be addressed if research is to lead to effective practice. Therefore, the rest of this paper will explore research, which may shed light on the main questions concerning the effectiveness of inclusive education. The review will be presented in two parts. The main section will comprise a review of the papers in specified journals 2000–2005, together with other studies mainly produced during this period. This review will therefore consider current evidence about efficacy. Prior to this, a brief review will be presented of the historical evidence.

An historical perspective

A key paper in the history of the move to inclusive education was that by Dunn (1968). Indeed, a recent survey reported that this was the most highly cited paper in the field of learning difficulties (McLeskey, 2004). It is interesting to note, therefore, that Dunn's paper is largely an opinion piece, radical and inspiring with an analysis of the then current system in the US together with a blueprint for change, much of which would be recognized now; his section of efficacy studies comprises just three paragraphs. Also worthy of note is Dunn's purpose. He sets out clearly that his concern is mainly 'A better education than special class placement is needed for socioculturally deprived children with mild learning problems who have been labelled mentally retarded' (p. 5). It is this element of special education that he argued 'in its present form is obsolete and unjustifiable' (p. 6). Note also his statement: We are not arguing that we do away with our special education programmes for the moderately and severely retarded, for other types of more handicapped children or for the multiply handicapped. (p.6) Around this time a number of studies were undertaken to investigate the efficacy of different placements and for different groups, the majority conducted in the US. These studies identified the methodological problems discussed above, leading to questions about the individual studies' validity, including the equivalence of children in comparative studies and attrition. For example, Blackman (1967:8) quoted in Christoplos and Renz (1969) argues that a study by Goldstein, Moss, and Jordan (1965) 'blends into the long line of negative findings that have characterized this area of research for the past 30 years' by failing to indicate the superiority of special classes. However, although using a random allocation design, it suffered substantial attrition losing three quarters of the original sample. Several reviews of inclusive education were undertaken in the 1980s (e.g. Madden & Slavin, 1983) and 1990s (e.g. Baker, Wang, & Walberg, 1994; Hegarty, 1993; and Sebba & Sachdev, 1997). These adopted different methodologies including overviews, reviews and meta-

analyses but failed to provide clear evidence for the benefit of inclusive education. Baker et al. reviewed several meta-analyses and found positive but generally small effect sizes, the highest for academic achievement, but primarily in only one of the three analyses (Table 1). Table 1. An analysis of three meta-analytic studies of the effects of inclusive placements (from Baker, Wang, & Walberg, 1994)

A further review of eight model programmes by Manset and Semmel (1997) found evidence of varying degrees of effectiveness and argued that 'inclusive programming effects are relatively unimpressive for most students with disabilities especially in view of the extraordinary resources available to many of these model programmes' (p. 117). Interaction effects between level of child difficulties and placement were reported by a number of studies using RCT or at least quasi-experimental designs. For example, Mills, Cole, Jenkins, and Dale (1998) found no overall differences in placement effects for groups of pre-schoolchildren with disabilities, but higher performing children benefited more from integrated special education class placement whereas lower performing children benefited more from mainstream or segregated placements (see also Cole, Mills, Dale, & Jenkins, 1991). By the end of the 20th century, therefore, the evidence for the effectiveness of inclusive education/mainstreaming might best be described as equivocal although, equally, there was little evidence for the superiority of special education. Rather, there was a degree of support for effectiveness but this was tempered by a number of caveats. Some concerned the methodology of the studies, while others may be interpreted not as critiques but realistic appraisals of the complexity of the topic. That is, it might not be realistic to ask if inclusive education was effective, but it would be better to focus on which models were more effective for which children including the relative importance of different moderators (Lindsay, 1989). Post-2000 Following Seethaler and Fuchs (2005), this section focuses on a target group of journals. This differs, therefore, from systematic reviews which explore the whole field using keywords to identify appropriate publications such as studies in the UK through the Evidence for Policy and Practice Information and Coordinating (EPPI) Centre (e.g. Kalambouka, Farrell, Dyson, & Kaplan, 2005). For the present study eight journals from the field of special education were selected. The *Journal of Special Education* (125 papers), *Exceptional Children* (135), *Learning Disabilities Research and Practice* (150), *Journal of Learning Disabilities* (282) and *Remedial and Special Education* (225) are major US journals overwhelmingly publishing studies undertaken in the US. The *British Journal of Special Education* (169) has been the major UK journal for SEN, and the *European Journal of Special Needs Education* (145) is the major European journal: the former largely publishes UK studies, while the latter reports studies mainly from across Europe. Finally, the *International Journal of Inclusive Education* (142) has a wider brief and includes papers from many countries across the world. Each issue from 2000 to the end of 2005 was examined, six full years, and papers were selected that had relevance to the effectiveness of inclusive education. No restriction was placed on methodology and hence both quantitative and qualitative designs were potentially acceptable. Each abstract was read and its relevance was evaluated. This process also allowed the generation of a range of categories concerning effectiveness. This differed from Seethaler and Fuchs's more focused paper, which selected only those studies examining reading and maths interventions with group designs and random assignment to treatment conditions. The derived categories were: opinion, comparative studies of outcomes, other outcome studies, non-comparative qualitative studies including non-experimental case studies, teacher practice and development, teacher attitude and the use of teaching assistants. In addition a category of research methodology was identified. Following the reading of the abstracts, papers were selected for detailed reading that appeared to address the effectiveness of inclusive education. As the selection criteria

were deliberately set to be broad this resulted in papers varying from those with a clear focus on effectiveness research questions through to others that addressed effectiveness in passing. The definition of ‘effectiveness’ was not tightly drawn, so allowing studies which reported on various child outcomes. Also, studies were selected on the basis of their investigating effectiveness, not whether inclusion was found to be effective. A total 1373 papers were considered. Despite the broad categorization of ‘effectiveness’, only 14 papers (1.0%) were identified that reported comparative outcome studies of children with some form of SEN. Other papers presented qualitative studies of inclusive practice, some using non-comparative case study methods but others reporting descriptions of practice, which may include respondents’ judgments. In this section, the 14 comparative outcome studies will be reported, followed by discussion of non-comparative qualitative studies. In the following section, process studies will be reported including research on teacher practice, teacher attitudes and the use of teaching assistants will be presented as these studies provide information about effectiveness even if they were not effectiveness studies per se. Finally, other recent research will be reviewed focusing on school effectiveness and inclusion.

Studies of outcomes

Comparative studies of outcomes Fourteen papers were identified as comparative studies of outcomes, of which two were reviews. There was substantial variation on several dimensions. None used a RCT method. Only nine compared the performance of children with SEN in different settings and in the other five (including two reviews), outcomes for children with SEN were compared with those for typically developing (TD) children, where both were attending mainstream schools (Table 2). The nature of children’s SEN varied greatly as did age of sample, with studies ranging from children in preschool/kindergarten to 17 year olds. Most studies (9) included measures of social, emotional or behavioural development together with academic development (including academic engagement) and the other five addressed social factors only, including self-concept. The studies are discussed by age of participants. An interaction effect was reported by Rafferty, Piscitelli, and Boettcher (2003) who researched a US preschool setting, where between 53% and 75% of the children in the inclusion classes had disabilities and all children in segregated classes had disabilities. The former contained 12 to 18 children, 1 special education teacher and 1 early childhood teacher; the latter contained 6 children, 1 special education teacher and 1 aide. The children in the inclusive classes had higher levels of functioning at pre-test but using a covariance model the study found an interaction between settings and degree of disability. Type of setting had no differential impact on children with low levels of disability in terms of either language ability or social competence but children with severe disabilities in inclusive settings had greater gains than those in segregated classes. The very high proportion of children with disabilities raises questions about whether these classes can be considered inclusive. An interaction effect was also found by Buysse, Goldman, and Skinner (2002) in a US study of 333 pre-school children (120 with disabilities and 213 TD) attending one of two forms of inclusive early childhood programmes; specialized settings had a majority of children with disabilities while in child care settings the opposite was the case. Disability covered a wide range of problems including deafness, autistic spectrum disorder and mental retardation. Children in the child-care settings had more playmates and were more likely to have a TD friend than those in specialized settings, but this could be due to the differences in availability of TD children in each setting. Other studies have produced mixed or equivocal results. A Dutch study comparing over 400 matched pairs of at-risk children in special and regular (mainstream) education (age up to 13 years) found no differences by setting on either academic or psychosocial development (Karsten, Peetsma, Roeleveld, & Vergeer, 2001). A Swedish study of 183 pupils (9–3 years) found no difference in self-concept between those

receiving support from special educators in mainstream schools (Allodi, 2000) although there was some evidence of those supported in mainstream having lower levels of self-concept for academic competence compared with those in small groups in special units. Wiener and Tardiff (2004) report a Canadian study of 117 children (Grades 4–8) with learning disabilities (LD) educated in one of four different service delivery models: In-class or Resource Room Support for those judged to need a lower intensity of service; Inclusion or Self-Contained Special Education classrooms for those needing a higher intensity of support. On a range of social factors addressing friendship, loneliness, self-perceptions and social skills, the comparisons of each pair of models tended to favour the more inclusive approach, although the overall levels of social and emotional functioning were lower than children without LD and the large number of comparisons increased the risk of Type I errors in the number of statistically significant differences found. A study comparing 8th grade students in middle schools in the US, one inclusive the other operating a pull out special education system, with matched groups of students with LD, found that the inclusive education group achieved significantly higher levels on a range of academic measures and equivalent scores on others (Rea, McLaughlan, and Walther-Thomas, 2002). These children also had better attendance and equivalent levels of suspension. The features of this relatively successful model included a 'teaming model' whereby teachers planned work together and classes rotated during the day. A positive finding for inclusion was also reported from a Norwegian study of 592 students with general learning problems over the three years of upper secondary schooling (Myklebust (2002). The study compared students who were taught exclusively in small groups outside the classroom, receiving adapted teaching during their first year of upper secondary, with those who were taught in ordinary classes. After three years the latter group had made better progress: 40% compared with 10% were academically 'on schedule'. Drop-out rate showed the opposite effect, however. This study therefore suggests a complex situation whereby the special class support in the first year helped to reduce the risk of drop-out, but was less effective than general class placement at that time for academic progress. Markussen (2004) compared 777 students with SEN, 285 attending special classes with reduced numbers of students and 492 attending ordinary classes, with a comparison group of 463 non-SEN students. The SEN students in special classes achieved a lower level of success compared with those in ordinary classes after other factors had been controlled. However, there were no differences among the SEN group attending ordinary classes in achieving formal competence irrespective of whether they received help in class or in small groups outside the classroom. A meta-analysis of self-concept of students with learning disabilities derived from an analysis of 36 research reports allowing 65 different placement comparisons (Elbaum, 2002) provides more substantial evidence. This found no overall relationship between self-concept and setting (regular classroom for all instruction, part-time resource, self-contained for all academic instruction and special school) for four out of five comparisons suggesting that students fared no better or worse in terms of self-concept in regular or separate classrooms. A review by Zeleke (2004) of 41 studies examining self-concept of children with learning difficulties compared with normally achieving children in mainstream also found strong evidence of the former having more significantly lower scores on academic self-concept, while evidence of social self-concept overall indicated they fared no worse. The studies, such as Zeleke's, which have examined outcomes for children with SEN compared with TD children, rather than by setting, provide different evidence regarding inclusion. A Dutch study of 25 9–12 year olds with behaviour problems in full-time regular education produced negative findings regarding inclusion as these children were socially included less than their peers without SEN (Monchy, Pijl, & Zandberg, 2004). Furthermore, the teachers were judged to have too positive a view of these children's social integration and to have underestimated the frequency of their being bullied and of bullying others. However, two

other studies provide more positive results. Wallace, Anderson, Bartholomay, and Hupp (2002) in a study of 118 inclusive classrooms in four US high schools selected from 114 successful schools showed that students with and without disabilities had equivalent high levels of academic engagement and low levels of inappropriate behaviour. Cawley, Hayden, Cade, and Baker-Kroczyński (2002) report a successful science programme in an inner city US school with very high levels of poverty. Students with LD and severe emotional disturbance were integrated into science lessons taught jointly by the regular and science teachers who had been on a 100-hour training programme. No behavioural problems were found and the success rate of the special educational students was equivalent to that of the general education students. Cambra and Silvestre (2003) studied the self-concept and social preference of Spanish students with a range of SEN and comparison TD children in a mainstream school with Special Experimental School status (35% had SEN of various kinds). The typically developing group had significantly more positive social and academic selfconcepts and were also more likely to be selected and less likely to be rejected. Hence, mainstreaming in this study was not associated with equivalent socio-emotional development for the SEN group.

Qualitative studies

Qualitative methodology has been used to investigate the progression of children but some do not provide sufficient data to allow a judgment on the findings. For example, Peters (2002) in case studies of two US schools claims a variety of gains for students with significant SEN, but no data are presented to support this conclusion. Other studies typically focus on processes rather than child outcomes, often using very small samples. For example, Hall and McGregor (2000) show that three children with disabilities were involved in a variety of peer relationships during kindergarten and Grade 1, but this level of involvement reduced by upper elementary grades (10–13 years), e.g. reciprocal nominations as playmate for two of the three boys reduced from 11 at kindergarten/Grade 1 to only one positive reciprocal nomination at upper elementary level. They were also less involved in shared activities although these children continued to play with and be accepted by peers in the playground. Hall and McGregor speculate that by the end of elementary schooling these boys may have been in classrooms but not perceived as part of a class. Hanson et al. (2001) found that only about 10% of the 25 children originally in inclusive preschool settings remained in inclusive settings five years later. They identified five factors influencing this change: professional influences, families' abilities to access information, influence of advocates, match between family and school needs and expectations, and the influence of child and family characteristics. This qualitative study based on annual interviews and observations reveals the tensions between a desire for inclusive education and the problems of meeting children's needs with the available resources. Other case studies have focused more on the processes operating within schools rather than on the children, suggesting possible areas for development, but in the absence of child level data these findings are speculative (e.g. Carrington & Elkins, 2002). Where outcomes have been examined, mixed results have been found. Pijl and Hamstra (2005) in a Norwegian study report that seven of 24 pupils (29%) in a full inclusive model of education had social-emotional development judged as 'worrying' by independent assessors, although the teachers and parents were more positive. Pavri and Monda-Amaya (2000, 2001) in two studies of 20 and 30 children, respectively, report that although children with learning disabilities felt part of a social network, many felt loneliness at school. In an interview study of 14 young people (12–18 years) with Down syndrome attending either their local mainstream secondary school or a resourced mainstream school, Cuckle and Wilson (2002) found that the young people were positive about friendships and having role models among mainstream peers but friendships were mainly limited to school.

More truly reciprocal friendships were noted with peers who also had SEN, including others with Down syndrome. Cuckle and Wilson suggest this reflects the closer match of interests, emotional maturity and communication skills. A study of 24 young people (mean age 22 years) who had transferred from a special school for pupils with moderate learning difficulties to mainstream presents an even gloomier picture (Hornby & Kidd, 2001). Only three of the 24 were working full-time and one part-time and none was married.

Studies of process

At the heart of all education is the practice of teachers; consequently, the role of teachers in developing inclusion is central to its effectiveness. A number of studies have explored teacher practice; these have typically been small-scale. Flem, Moen, and Gudmundsdottir (2004) studied the practice of one teacher recommended as achieving effective inclusive practice in Norway over four months, working with a class of 23 7th grade students including three with SEN. The study identified elements of practice considered to lead to effectiveness. These included general educational practice applied to the pupil with SEN (e.g. effective scaffolding; developing a modelling positive interactions and ambience; contingency management and effective instructional methods including feedback). Also identified as important were collaboration with other teachers and the school administration. Other studies have supported these factors. Additional special teachers to work with kindergarten teachers (Takala & Aunio, 2005) and collaborative teams to work with 4th grade students with severe disabilities or considered at-risk in general educational classrooms (Hunt, Soto, Maier, & Doering, 2003) have been found useful. The importance and effectiveness of individualized Unified Plans of Support (UPS) were indicated by observed changes in the students' behaviour with levels of engagement increasing substantially, as did an increase in initiating interactions with teachers and other children, together with team members' opinions of improved performance. The UPS stressed team action and Hunt et al. speculate that a key element in its success was that team members had time to reflect together. The development of a positive ethos, with a values-based commitment to inclusion, has also been shown to have an important role (Fisher, Roach, & Frey, 2002; Kugelmass, 2001). However, teachers may not share these views, even if there is a national policy for inclusion. A sense of lacking competence (Dockrell & Lindsay, 2001); lack of resources or additional training and support for teachers to develop their own skills, and an unrealistic or lack of awareness of the prevalence of developmental problems (Dockrell, Shield, & Rigby, 2003) may undermine teachers' development of inclusive education (Freire & Ce'sar, 2003; Ska'rbrevik, 2005).

Teacher attitudes

Teacher attitudes, as well as their behaviours, have been proposed as a key factor in successful inclusive education. Reviews have identified a number of important factors affecting teacher attitudes to inclusion (Avramidis & Norwich, 2002; Scruggs & Mastropieri, 1996). Although a general shift to a more positive attitude to inclusion has been identified, there is no evidence of acceptance of a policy of total inclusion. The nature of children's disability or SEN appears critical with teachers generally having more favourable attitudes to including children with physical and sensory impairment than those with learning difficulties or BESD (e.g. Clough & Lindsay, 1991). There is a lack of consistent evidence concerning teachers' age and gender and age of pupils taught, but teachers' beliefs and training are important (Avramidis & Norwich, 2002). There is mixed evidence concerning experience of contact with children with SEN (e.g. Center & Ward, 1987; Praisner, 2003). Resources, both physical including Information and Communication Technology (ICT) and teaching materials, and human, including teaching assistants, are important, as is support from the head teacher (Marshall, Ralph, & Palmer, 2002). Furthermore, restructuring of the physical environment and organizational changes may also be necessary for successful inclusion

(Avramidis, Bayliss, & Burden, 2002). Hence teachers may have positive attitudes in principle but they temper these by a number of practical considerations (Croll & Moses, 2000; Frederickson, Dunsmuir, Lang, & Monsen, 2004). This is particularly the case with respect to meeting curricular demands rather than addressing social inclusion (Flem & Keller, 2000) and attitudes may vary with curriculum subject (Ellins & Porter, 2005).

Teaching assistants

Teaching assistants in the UK have had many roles over the years from general duties around the classroom to specific work with individual pupils with SEN. Increasingly, a more general SEN role to support inclusion working in collaboration with the teacher is being promoted. However, the UK context has been made more complex by the tradition of these non-SEN roles being undertaken by other personnel working as assistants and the recent workload agreement aimed at reducing teachers' responsibilities for non-teaching tasks. There have also been many different terms used, a common one for those with the SEN role having been 'learning support assistants'. In the US, the term 'paraprofessional' is the most common. In this paper teaching assistant (TA) will be the preferred term. The key issues to consider are the nature of TA practice, the training they receive to carry it out and how this helps to support the inclusion of children with SEN. The employment of TAs to support children with SEN increased substantially during the 1990s (Farrell, Balshaw, & Polat, 1999). However, their role has been unclear, often left to schools to determine. Teachers have typically been positive about the support available from TAs (Moran & Abbott, 2002; Ofsted, 2002) but often have not been able to articulate clearly the academic benefits they believe the pupils have attained (Blatchford, Russell, Bassett, Brom, & Martin, 2004). French (2001) found little evidence of scheduled planning meetings between paraprofessionals and teachers. The main practice provided by TAs has been direct support of pupils with SEN (Amaiz & Castejo'n, 2001; Blatchford et al., 2004; Giangreco, Edelman, Broer, & Doyle, 2001; Groom & Rose, 2005) but see Emanuelsson (2001) for some variations. However, the specific nature of such support has varied to include direct teaching of academic skills, life skills or vocational skills; supporting pupils with challenging behaviour to prevent or ameliorate possible disruption and optimize both conduct and learning; facilitating interactions with other pupils; and providing personal care or supporting self-help skills in children, e.g. toileting and feeding. There have been concerns regarding the potential overlap with teaching and confusion over what TAs actually do and what professionals think they should be doing (Giangreco, Edelman, & Broer, 2001). One concern is the distinction of role between the TA and teacher: should the TA support, supplement, extend or replace the teacher? Given the implications for conditions of service this issue has raised concerns beyond the pedagogic into the political arena. However, the use of TAs to support inclusion is now well established but lack of training has been highlighted as a major concern for successful undertaking of a pedagogic role (Blatchford et al., 2004; Farrell et al., 1999; Riggs & Mueller, 2001). In the UK, there is indirect evidence to support impact on children, beyond the opinions of the teachers with whom TAs work. Ofsted (2002) report that the evidence from their inspections of schools shows the quality of teaching in lessons with TAs is better than in lessons without them, but point out that schools rarely evaluate the impact of TAs on pupils' learning and attainment. Blatchford et al. (2004) in a large-scale study report that TAs had an indirect effect on teaching by increasing pupil engagement and helping teachers focus on teaching; with a TA present there was a more active form of interaction and more individualized teacher attention. Evidence for social benefits comes from an evaluation of a training programme aimed to teach four TAs how to facilitate interactions between pupils with severe disabilities and their peers. Although small scale, a comparison of baseline and post-intervention observational data indicates the training was successful in not only doubling TA

facilitative behaviour but also student interaction, which increased 25-fold and was maintained (Causton-Theoharris & Malmgren, 2005). The use of TAs is now very well established. Teachers and TAs are developing collaborative teamwork and training is now more widespread. Nevertheless, concern remains. The evidence of positive impact remains limited, both in absolute terms and also with respect to specific training programmes for which further evidence of replicability is required. Broer, Doyle, and Giangrenko (2005) have raised important questions about the negative as well as positive aspects of TA support from a study of pupil perspectives which identified the TA being seen as having four roles: mother, friend, protector and primary teacher. Hence, the nature of TAs' work and the role taken and perceived by the child, and the relationship between role and child outcomes require more research.

School effectiveness and inclusion

Although the focus of this paper so far has been on the impact of inclusion on pupils with SEN, it is also reasonable to examine the impact on pupils without SEN. Indeed England's Special Educational Needs and Disability Act 2001 states that a child with SEN must be educated in a mainstream school unless this is incompatible with the parents' wishes or the provision of efficient education of other children. Two research strands may be identified: the direct impact on non-SEN children and the impact on overall school standards and effectiveness. In a systematic review of 26 studies, Kalambouka et al. (2005) identified 23% positive findings, 15% negative, 53% neutral and 10% mixed findings with respect to impact of inclusion on non-SEN pupils. Most studies concerned the inclusion of pupils with difficulties in learning or cognition and there was evidence of more negative findings where inclusion concerned pupils with emotional and behavioural difficulties; however, no study reported negative impact when the included children had physical, sensory or communication difficulties. Studies such as those reviewed by Kalambouka et al. are relatively small-scale but have the advantage of data drawn from individual pupil profiles derived from instruments designed to focus on specific domains. Large-scale studies of school level impact typically use less sensitive measures. For example, the recent availability of PLASC data in England has allowed large-scale, national studies, but using less specific criteria. PLASC allows analysis of SEN by two major criteria: whether a child has a statement of SEN or is at the next lower level (School Action Plus) and the primary need identified (e.g. moderate learning difficulties). Lunt and Norwich (1999) found a substantial negative correlation between attainment at 16 years (General Certificate of Secondary Education (GCSE), average points school for the school) and level of inclusion in a sample of 3151 secondary schools. Not more than 3% of the top 20% GCSE performers were schools within the top 20% in terms of proportion of SEN pupils. However, this study did not take account of social disadvantage, a factor that has been found to be associated with higher levels of identified SEN (Lindsay et al., 2006; Skiba, Simmons, Poloni-Staudinger, Feggins-Azziz, & Chung, 2005). A national study using PLASC data by Dyson, Farrell, Patal, Hutcheson, and Gallanaugh (2004) found a very small, negative relationship between pupil attainment (GCSE and GNVQ average points score) and level of inclusivity (the proportion of pupils at School Action Plus and with a Statement). However, there was evidence of socio-economic disadvantage being a confounding factor: more inclusive schools were more likely to have higher proportions of pupils suffering socio-economic disadvantage, as indicated by eligibility for free school meals. Neither of these large-scale analyses addressed inclusion in terms of more refined measures of inclusion such as classroom processes, resources and curricula, although the same criticism could be made of many small-scale studies. Furthermore, Dyson et al. (2004) report that analyses of 16 case studies in their study indicated that categorization of schools on their measures of inclusivity and performance was 'somewhat unstable over time' (p.

57). Also Lindsay et al. (2006) report that socio-economic disadvantage is differentially related to different categories of SEN, with a substantial relationship with BESD but not sensory impairment.

DISCUSSION

Inclusion has been a major policy initiative designed to improve the educational opportunities of children with special educational needs and disabilities. Support for inclusion is based on two foundations: that children have a right to inclusion within mainstream schools and that inclusive education is more effective. The present review has focused on the latter question (see Lindsay, 2003 for a discussion of the former). Nevertheless, both are important. Effectiveness must be judged relative to the criteria used, which are partly derived from values as well as technical considerations. Overall, the weight of evidence reviewed in this paper cannot be said to provide a clear endorsement for the positive effects of inclusion (see also Zigmond, 2003). Just 1% of over 1300 studies published 2000–2005 reviewed addressed effectiveness and the results from these studies were only marginally positive overall, although comparability between outcomes for SEN and TD children could be interpreted as positive rather than non-difference. Furthermore, the studies cover a range of ages and methods of inclusion; used a variety of methods and produced evidence on a number of different outcome variables. Taken as a whole, and with the pre-2000 evidence, which presents a similar picture, there is a lack of a firm research base for inclusive education to support either whether this is a preferable approach in terms of outcomes, or how inclusion should be implemented. The review has highlighted the importance of interaction effects and hence the need to examine moderators and mediators affecting outcomes. This amounts to a clear indication of the power of policies argued to be supporting children's rights (to be included) rather than of evidence of optimal practice. The research base is more helpful in identifying processes that facilitate inclusion. The differential benefit of training TAs is a case in point. However, there is a lack of rigorous studies that demonstrate positive child outcomes rather than improved teaching processes. Can inclusive education be evaluated? Some educationists question the value of research in this field as inclusion is considered appropriate *de facto* and hence what is needed is a commitment to ensure it is implemented. Negative findings may be viewed as indicating limitations in present practice, which must be addressed, rather than as presenting a challenge to the basic position in support of inclusion (e.g. Booth, 1996). This stance sits uneasily with other researchers who are committed to evidence-based policy and practice. Also, a difficulty with this position is that the relative standing and priority of rights are not universally agreed; often there may be competing rights (Mithaug, 1998). Others do use the research literature but argue that the evidence more strongly supports inclusion whereas the position on the basis of the present review is that it is barely more than equivocal (see also Norwich & Kelly, 2005). Those who are committed to research also have significant difficulties in examining the effectiveness of inclusion. First, problems in the definition of variables are endemic. How is 'inclusion' to be operationally defined? Dyson et al. (2004) used the proportion of pupils designated as having SEN as a measure of inclusivity. This is highly problematic, as they recognized. The categorization of a child as having SEN and the specification of the severity of the SEN (as judged by the pupil having a Statement or being at the lower level of School Action Plus in the English system) are both contentious. Each is related to objective measures but is also influenced by school policies, including attempts to secure resources. Categories representing lesser severity are even less reliable (Lindsay et al., 2006). Attribution to certain categories of SEN (e.g. moderate learning difficulties) and the definition of locational variables are also problematic. Mainstream schools vary greatly (e.g. in terms of socio-economic disadvantage, overall levels of attainment and ethnic profiles) and

locational distinctions within 'mainstream' may be complex. It cannot be assumed that terms such as resource base, unit, integrated resource and designated special provision refer to comparable provision, or even that there is commonality within each category. Variation also exists, despite the National Curriculum in England, in curriculum content, pedagogy, grouping and use of ICT and teaching assistants. Such variations increase further when systems in different countries are considered. A second difficulty concerns the changing nature of schooling. Many special schools have developed link/outreach programmes where pupils attend both mainstream and special schools. The use of relatively segregated special unit provision in schools has changed to a more diffuse system of class/resource base plus support within mainstream classrooms. Furthermore, the mainstream school system itself is changing, for example with the development of Charter schools in the US and federations of schools in England. These changes present methodological challenges in terms of comparative research in this field, as 'inclusion' can no longer be conceptualized as the opposite of 'segregation'. Rather, inclusion into what? becomes a key research question, and hence adds complexity to comparative studies. For example, federations of schools in England have developed a range of collaborative partnerships with varying purposes, forms of leadership and governance, and degree of focus on SEN (Lindsay et al., in press). Some have paired a successful school with one in difficulties; others have developed a broader based sharing of expertise; one school which opened only at Easter 2006 combines a primary, secondary and the only special school in the local authority into one school building under an executive director for all three schools. A third theme concerns the use of teaching assistants (TAs) which has developed substantially with indications of potential benefit (Blatchford et al., 2004; Ofsted, 2002). Although their introduction in the past may have been seen as a cheap approach to inclusion, the size of this professional force now presents a major opportunity for development. There is evidence for the effectiveness of training (Causton-Theoharris & Malmgren, 2005); what is now needed is evidence of effectiveness of different support regimes for children with different types of SEN. In particular, it is important to compare not only outcomes related to trained vs. untrained TAs, but also to compare TAs against regular and specialist trained teachers, both with regard to child outcomes and cost/benefits. A fourth theme concerns the effectiveness of pedagogy and needs to be focused on the nature of different SEN. Brookes (2002), Graham (in press) and Pressley, Graham, and Harris (2006) have reviewed successful pedagogy for literacy intervention while Seethaler and Fuchs (2005) have examined both reading and maths. Key principles that optimize achievement, of both TD children and those with literacy difficulties have been identified. Other studies have identified comparable principles for other domains including BESD (Evans, Harden, & Thomas, 2004). Both Davis and Florian (2004) and Lewis and Norwich (2005) have taken a broader perspective in an attempt to identify whether there is a separate special education pedagogy, reviewing evidence across the range of categories of SEN. The general findings from their reviews are that there are principles that can be applied to optimize learning, but that these must be both conceptualized and operationalized in relation to the individual child's learning and developmental needs and to the setting in which the teaching and learning are to take place. Finally, it is necessary to consider the use of teams of practitioners. Teams have a chequered history. The child guidance team model was heavily criticized in the early 1970s (Tizard, 1973) but other forms of teams have developed. In England the development of Children's Trusts and the Every Child Matters agenda require the development of children's services with clear integration of functions to avoid vulnerable children falling through gaps in services. Teams may be focused at school level to support inclusion. However, this is currently an under-researched area and both the earlier studies and recent evaluations provide mixed findings (e.g. Heath et al., 2004).

A way forward

This paper has focused primarily on research evidence of the effectiveness of inclusive education. However, it was also argued that there is a separate conceptual framework that must be considered. This concerns values and rights. Inclusive education has been driven by a belief that this is the correct approach, to include rather than segregate and exclude. Policies of various governments have pursued this line (e.g. Department of Education and Skills, 2001b). However, there are signs of change. The UK House of Commons Committee on Education and Skills (2006) urged the Government to clarify its position on inclusion which it argued was confusing, with policy statements indicating an expectation of fewer special schools, whereas the Minister's witness statement to the Committee stated that the Government would be 'content' if, as a result of local authority decisions, the current 'roughly static portion of special schools' continues' (p. 5). The Committee was strident in its criticism: 'The government's clear ideological stance to promote inclusion is leading to parental backlash based on fear, frustration and confusion. This duplicitous approach by the government undermines people's confidence in its ability to deliver in the genuine interests of those children with SEN' (p. 125). However much educational psychologists may wish that evidence should drive policy, the reality is that research evidence is only one of several influences taken into account by politicians. Nevertheless, it is important that, as researchers and practitioners, we continue to produce research evidence to influence policy. Given that the government policy in many countries is often confused but generally supportive of inclusion, but the evidence for the effectiveness of inclusive education is, at best, marginally, in support of inclusive education, the task now is twofold. First, there is a need for further conceptualization of the options of inclusive education. It is necessary to consider inclusive education as a multifaceted practice, built upon foundations grounded in a belief that children with developmental difficulties and SEN require appropriate education, which optimizes their life chances as individuals to become full members of society. The proposition that this should largely if not entirely be facilitated by education in mainstream schools should be recognized as a values-based not empirically based position. There are indications of practices which appear to support inclusion, but there is a need for a more analytical consideration of combined (interactional) effects of relevant mediator and moderator factors concerning pupil diversity; curricular and assessment specifications and the education system which, being in a state of increasing change and diversity may support more effective education, partly by providing more flexibility in the system. (Odom et al., 2004; Wedell, 2005). The agenda proposed here, therefore, accepts the basic premise that children's needs should be addressed within an inclusive education system in the broadest sense, but views this as more than simply a question of mainstream vs. special school or that inclusion can only mean full-time education in a mainstream class. The research evidence on effectiveness cannot be used to justify either position. This approach also requires its own research agenda, which develops beyond simple comparative studies to a series of complementary research strands. These would include large-scale analyses of datasets together with detailed analyses of the implementation of inclusion in different settings. In particular, there is a need to focus on mediator and moderator influences on processes and outcomes rather than location (Zigmond, 2003). Studies designed on this basis could also be usefully shaped by drawing upon psychological theories to a greater extent than is apparent from past research. This approach would be grounded in an ecological systems approach with studies drawing appropriately on both quantitative and qualitative methods. Furthermore, there could be greater use of longitudinal studies to explore the impact of educational systems on the children over time. This approach is research-based and hence actively rejects both the view that research is unnecessary as inclusion is a right and a simple model of 'full inclusion for all' (see also Kavale & Mostert, 2003). There is an opportunity to implement and evaluate a

variegated system of inclusive education appropriate to this century's complex societies and patterns of schooling where inclusion in its widest sense is impartial, addressing religion, ethnicity, social class and other social dimensions as well as SEN and disability. Parents will be important contributors on behalf of their children, as will children themselves, to shape up both the implementation of inclusion and its evaluation. The task is to examine, carefully and analytically, how inclusive education can be effective in meeting the different needs of individual children with disabilities and special educational needs.

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