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Afroditi Kalambouka [a], Peter Farrell [a], Alan Dyson [a] & Ian Kaplan [a]

[a] University of Manchester, UK

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The impact of placing pupils with special educational needs in mainstream schools on the achievement of their peers

Afroditi Kalambouka*, Peter Farrell, Alan Dyson and Ian Kaplan
University of Manchester, UK

Background
Over the past 20 years or so policy and practice on the education of children with special educational needs (SEN) has been aimed at placing increasing numbers of children in a mainstream school environment. Although this policy has been supported in principle by many teachers, parents and local authority officers, there has been much less agreement about whether this principle can be realized in practice, and even if it can, about what the impacts might be on the achievements of pupils with SEN in mainstream schools and, in particular, on their peers.
Purpose
This paper discusses the key findings from a systematic review of the literature carried out by the Inclusion Review Group, on behalf of the Evidence for Policy and Practice Information (EPPI)-Centre, the purpose of which was to review research evidence on whether the placement of pupils with special educational needs (SEN) within mainstream schools has an impact on academic and social outcomes for pupils *without* SEN.
Design and methods
The methodology followed the procedures adopted by the EPPI-Centre. Having agreed on the inclusion and exclusion criteria for studies that could be included in the review, an initial pool of 7137 papers were identified through electronic databases. After having screened all their titles and/or abstracts and having marked out possible papers to be included in the review, 119 paper copies were obtained—all of which were read by one or more of the authors of this paper. This led to a further reduction to 26 studies that were subjected to the EPPI data extraction process and synthesis.
Conclusions
Overall, the findings suggest that there are no adverse effects on pupils without SEN of including pupils with special needs in mainstream schools, with 81% of the outcomes reporting positive or neutral effects. Despite concerns about the quality of some of the studies that were reviewed and the fact that the great majority were carried out in the USA, these findings should bring some comfort to headteachers, parents and local authority officers around the world at a

*Corresponding author. School of Education, University of Manchester, Oxford Road, Manchester M13 9PL, UK. Email: Afroditi.kalambouka@manchester.ac.uk

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time when concerns have been raised about the problems that schools face in responding to the twin agenda of becoming more inclusive and, at the same time, raising the achievements of all their pupils.

Keywords: *Inclusion; Special educational needs; Pupil achievement*

Introduction

In general terms the notion of 'inclusive schooling' is complex, ambiguous and contested (Dyson, 1999; Dyson & Howes, forthcoming; Farrell & Ainscow, 2002, Farrell *et al.*, 2004; Farrell, 2006), and can refer to many different aspects of school policies and practices in relation to different groups of students. However, in relation to pupils with special educational needs (SEN), the term 'inclusion' typically refers to the placement in a regular school population of students who might otherwise be placed outside the mainstream. This is what we might call 'population inclusivity', or what the Audit Commission has called 'presence' (Audit Commission, 2002). On this definition, a more inclusive school has in its population a greater number and/or a wider range of students with special educational needs who might otherwise be placed outside the mainstream than does a less inclusive school.

National education policy in England (and more generally across the UK) pursues avowedly inclusive aims but within the context of a highly demanding 'standards' agenda which focuses on meeting targets for raising the attainments of students to specified target levels. Not surprisingly, this apparently twin-track approach has led to some concerns as to how schools can reconcile the twin imperatives of increasing their inclusiveness, through admitting more children with SEN, while at the same time not reducing their capacity to produce good outcomes for their students (see Ainscow *et al.*, 2006). Similar pressures are exerted on schools in the USA. Many argue (e.g. Evans & Lunt, 2002) that these competing priorities can make it more difficult for schools to fully include children with disabilities. However, as Norwich (2002) and Rustemier and Vaughn (2005) indicate, there are some local authorities that have drastically reduced the numbers of pupils they send to special schools and hence they seem to have been successful in allaying the fears expressed by staff in the mainstream sector that this could reduce a school's overall levels of achievement.

Set against this concern are some powerful theoretical arguments suggesting that an inclusive approach by schools should enable them to generate better student outcomes (Ainscow, 1991; Skrtic, 1991; Lipsky & Gartner, 1997). There is also a good deal of empirical evidence which, whilst not supporting some of the more ambitious claims made for the effects of inclusion, suggests that some groups of students with SEN, who are placed in regular schools, do no worse socially and academically than if they were placed outside the mainstream (see Lunt & Norwich, 1999; Farrell, 2000; Lindsay, 2007). In addition, the previous reviews undertaken by the EPPI Inclusion Review Group (Dyson *et al.*, 2002; Howes *et al.*, 2003) lend support to this general view.

What have not yet been subject to a systematic review, however, are studies that set out to explore empirically the relationship between the inclusiveness of a school and the outcomes it produces for the population of students *without* special educational needs. The aims of this paper therefore are to report on the findings of a systematic review of the research literature, using EPPI procedures, that has explored this key question (see for full report Kalambouka *et al.*, 2005). The findings have the potential to fill a significant gap in the evidence base which, if left unreported, will increase the danger that policy and practice will be developed on the basis of an enthusiasm for inclusion or an antipathy towards it—neither of which is informed by robust evidence. The need for further work in this area has been given additional impetus as a result of the recent concerns about inclusion expressed by Warnock (2005) and in the subsequent edited book (Cignan, 2007).

Research background

The great majority of literature reviews on the impact of inclusion have focused on outcomes for pupils with SEN rather than on their non-disabled peers, although some of these reviews devote a section on the impact of inclusion on pupils without SEN (Harrington, 1997; Harrower, 1999). Harrington (1997) concluded that the effects were at best neutral, while Harrower (1999) reported positive outcomes in terms of attitudes, acceptance, knowledge of disabilities and friendships although one study concluded that placing a student with severe disabilities in regular education was not enough to reduce the negative stigma of SEN.

There are also a small number of non-systematic reviews of the literature that have addressed the issue of the impact of inclusion on non-disabled students. In general the findings from these reviews suggest that there is little or no negative impact on children without SEN. Peltier (1997), for example, reviewed five studies where the outcomes suggested that inclusion leads to a reduced fear of human diversity and the development of warm and caring friendships. In addition, none of the three studies reviewed by Moore *et al.* (1998) reported a negative impact of including pupils with SEN on students without disabilities in terms of academic achievement. In a series of papers that focus on social outcomes for pupils without SEN, Staub and Peck (1994) and Staub (1996, 1999) conclude that inclusion not only 'does not harm non-disabled children', but that there are potential benefits in terms of reduced fear of human differences, growth in social cognition, improvements in self-concept, development of personal principles, and warm and caring friendships. Salend and Duhaney (1999) reviewed four studies on the academic outcomes of inclusion on pupils without SEN. The findings indicated that pupils with SEN who attended an inclusive classroom did not interfere with the students' academic performance in terms of scores in various subjects and in terms of allocated and engaged instructional time. Furthermore, they found overall positive reported attitudes of students without disabilities towards inclusive classrooms, increased tolerance to individual differences, greater awareness and sensitivity to human diversity and the needs of others. In contrast to these positive findings, Petch-Hogan and Haggard (1999), in a review of seven studies, found some negative attitudes among pupils without SEN towards their disabled peers.

Manset and Semmel (1997) attempted a rather more systematic review of the literature on inclusive programmes for students with mild disabilities, primarily learning difficulties. The review also included effects for students who are at risk, as well as results for general education students. Findings from eight programmes referred to in 11 studies suggest, overall, that organizational and instructional changes incorporated in the inclusive programmes lead to positive outcomes on the achievements of non-disabled students.

All the reviews referred to above are relatively small scale, and in all but one case (Manset & Semmel, 1997), they are not systematic. Although the findings tend to point in the same direction, taken together, they only make a modest contribution to knowledge in this complex area. The only large-scale UK study that has addressed this general area was commissioned by the Department for Education and Skills (DfES) and focused on the relationship between inclusion and pupil achievement in English schools. This involved a detailed statistical analysis of individual pupil data from the 2002 national pupil database and sought to explore the relationship between school and LEA inclusivity and pupil achievement across all four key stages (Dyson, *et al.*, 2004, 2007; Farrell *et al.*, 2007). In summary, the study found that, for all practical purposes, there was no relationship between the placement of pupils with SEN in mainstream schools and the achievements of all pupils.

Methodology

Review question

The following question provided the starting-point for the review: what evidence is there that the inclusiveness of schools has impacts on outcomes for the students without special needs in those schools?

Having agreed on the question, the methodology for the review followed the guidelines laid down by the EPPI-Centre for carrying out systematic reviews. The full details of the method used to select studies for this review are provided in the main report (Kalambouka *et al.*, 2005). Here we provide an overview of the key steps that were undertaken.

Inclusion criteria

In order to select the studies to be included in the systematic review, we developed clear inclusion and exclusion criteria that would enable us to interrogate studies before deciding whether they could be included. These criteria incorporated studies that:

- reported on the results of empirical research rather than being purely theoretical or exhortatory;
- reported evidence of the impact of the intervention: through a longitudinal study of one school; or by comparison with a similar but less inclusive school (with a lower level of population inclusivity); or by comparison between different conditions within the same school (such as more and less inclusive classes);
- were concerned with the phases of compulsory schooling (ages 5–16).

Outcome measures

We defined the term 'student outcome' quite narrowly as a change in the capabilities of students. These capabilities could be academic—normally assessed through tests and/or school and pupil reports (e.g. increased/reduced knowledge and skills in a curriculum area), or social and personal—normally assessed through personality tests, observations, school and pupils reports (e.g. increased/reduced self-esteem or ability to sustain friendships).

Coding studies

The studies' outcomes were coded as *positive*, *negative* or *neutral*. Outcomes were coded as *positive* if the findings indicated that the achievements of pupils without SEN increased following the placement of pupils with SEN. Alternatively, they were classed as *negative* if the achievements of non-SEN pupils fell. Many studies reported found no discernable difference in the achievements of pupils without SEN following the introduction of pupils with special needs. These studies were coded as having *neutral* outcomes.

'Category' of pupils with SEN who were included

Research on outcomes associated with the inclusion of pupils with different types of SEN was also included in the review as other research (e.g. Dyson *et al*., 2004) has suggested that the impact of including pupils with particular types of SEN—e.g. those with behavioural, social and emotional difficulties—may be more negative than it is for other groups of pupils. We therefore used the four main categories from the Code of Practice (DfES, 2001) to describe the included students, 'Cognition and learning', 'Behavioural, emotional and social difficulties (BESD)', 'Sensory and/or physical needs' and 'Communication and interaction'. As these categories are specific to England and Wales, for studies based in other countries we made a judgement, based on the description of the pupils' needs in each paper, as to which category of special need the children fitted. There were inevitably several studies where children with more than one type of SEN were included and studies where children were described as having multiple problems, for example, problems in cognition and learning as well as BESD. In such studies, we considered the impact on outcomes for pupils without SEN of pupils with each of these 'categories' of special need.

Identification of studies for in-depth review

Initially 7137 papers were identified through searches of electronic databases. After having screened all their titles and/or abstracts and marked out possible papers to be included in the review, we eventually obtained 119 paper copies all of which were read by members of the review team. This led to a further reduction to 26 studies that were subjected to keywording and the EPPI data extraction process.

The following are the key characteristics of the 26 studies that were selected for in-depth review:

- All were evaluation studies, 15 of which were naturally occurring, in that the pupils with SEN were placed in a mainstream school as a result of local policy decisions and not as part of a research project. The researchers used the opportunity presented by these schools to carry out their study. The remaining 11 studies were 'researcher manipulated' involving some form of experimental design where specified groups of pupils were deliberately placed in one setting as part of planned study.
- Usually outcome measures for one group, where the pupils had worked alongside children with SEN, were compared to similar groups within the same school or to a similar school, where no pupils with SEN had been included.
- Typically the 26 studies referred to the inclusion of pupils with a variety of SEN types. However, pupils who experienced difficulties in the area of cognition and learning were referred to in all but two of them. Pupils with difficulties in other SEN areas featured less prominently; 12 mentioned pupils with BESD, 11 sensory and physical needs and nine difficulties in communication and interaction.
- The majority of the studies (21) focused on academic outcomes and these were measured in a wide variety of ways, including class tests, national examinations and teacher ratings.
- Some 24 of the studies reported statistically significant differences in one or more outcomes. Two were detailed qualitative studies.
- Of the 26 studies, 16 also looked at the impact of inclusion on the achievements of pupils with SEN and, for some of these, this was the primary focus of the study.
- Virtually all the studies (21) focused on the outcomes of inclusion for primary-aged pupils.
- The nature of the inclusion experienced by the pupils with SEN was described in different ways. In some studies (16) this was described as the proportion of pupils with SEN in a mainstream class, whereas in others (11) it was described as the number of hours per week (or day) that a child with SEN spent in a mainstream class. Some studies described inclusion in both ways.
- The studies ranged over a period of 23 years; five were published before 1990, 15 between 1990 and 1999 and five from 2000 onwards.
- The great majority of these studies were American (21), although there were two studies from Australia, one from Canada and one from Ireland.

Findings from the systematic review

Overview

It is important to remember that each of the 26 studies yielded a number of key findings or outcomes, all of which were relevant to this review. To illustrate this point the study by Lundeen and Lundeen (1993) considered the impact of including pupils

with *three* types of SEN, cognition and learning, BESD, and sensory and physical difficulties on the academic achievements of pupils without SEN in both primary and secondary schools. Hence this one study produced six different findings, three in primary and three in secondary, all of which were relevant to this review. All the other studies yielded at least one finding and, taken together, there were a total of 78 different findings from the 26 studies.

Tables 1 and 2 provide a summary of the 71 findings across different categories of SEN and in primary and secondary schools. The names in each of the boxes are the authors of the studies and the shading indicates whether the findings were classed as 'positive', 'neutral' or 'negative'. Given the number of studies and associated findings, it is not possible, in this paper, to refer in detail to the specific studies that we reviewed. Readers are referred to the full EPPI report (Kalambouka *et al.*, 2005) for a discussion of each of the 26 studies and associated findings. Here we highlight some of the more significant findings from the studies that support the overall conclusions in respect to pupils in primary and secondary schools.

Cognition and learning

Almost all studies involved samples of students who had difficulties in cognition and learning as the main type of SEN. Overall, the inclusion of pupils with these difficulties had a neutral effect on their peers without difficulties. However, this varied across the type of outcomes (academic and social) and the school type (primary and secondary).

In terms of academic outcomes in *primary* schools (Table 1), there were 12 studies that reported neutral outcomes when students with difficulties in cognition and learning were included in such schools, three studies reported positive outcomes and none reported negative outcomes. Among the studies that yielded neutral findings, Huber *et al.* (2001) found no relationship between academic outcomes on standardized measure of mathematics in and the placement of pupils with learning difficulties. In another study, Beuter (1984) assessed the relationship between the inclusion of 25 pupils with learning difficulties in a physical education setting where approximately one in four pupils had SEN and found that the performance of the non-SEN students was not affected. Using a quasi-experimental design with a control and experimental sample comprising over 500 non-SEN students, McDonnell *et al.* (2003) also found that there were no differences in the basic literacy and mathematics skills of pupils enrolled in two types of classes, those containing pupils with SEN and those without such pupils. This neutral outcome was also illustrated in studies where the included pupils were referred to as having severe to profound disabilities (Sharpe *et al.*, 1994; Rankin *et al.*, 1999).

Four studies reported positive academic outcomes for primary school students in either science, literacy or mathematics when students with cognitive and learning difficulties were included (Stevens & Slavin, 1995; Shinn *et al.*, 1997; Mastropieri *et al.*, 1998; Saint-Lauren *et al.*, 1998).

The picture for social outcomes, when pupils with cognitive and learning difficulties are included in primary schools, is slightly more positive when compared

Table 1. Impact of inclusion across type of SEN: primary schools

	Cognition and learning		BESD		Sensory/physical		Communication	
	Academic	Social	Academic	Social	Academic	Social	Academic	Social
Primary	Affleck *et al.* (1988) Beuter (1984) Hillen *et al.* (1992) Huber *et al.* (2001) Hunt *et al.* (1994) Lundeen & Lundeen (1993) McDonnell *et al.* (2003) Rankin *et al.* (1999) Rarick & Beuter (1985) Sharpe *et al.* (1994)	Bear *et al.* (1991) Sharpe *et al.* (1994) Tapasak & Walther-Thomas (1999) Hillen *et al.* (1992) Sasso & Rude (1988) Shevlin & O'Moore (2000) Stevens & Slavin (1995) Beuter (1984) Daniel & King (1997)	Affleck *et al.* (1988) Huber *et al.* (2001) Lundeen & Lundeen (1993) Sharpe *et al.* (1994) Tapasak & Walther-Thomas (1999) Willrodt & Claybrook (1995) Saint-Laurent *et al.* (1998) Mastropieri *et al.* (1998) Brown (1982)	Sharpe *et al.* (1994) Tapasak & Walther-Thomas (1999) Hepler (1998) Sasso & Rude (1988) Brown (1982)	Huber *et al.* (2001) Obrusnikova *et al.* (2003) McDonnell *et al.* (2003) Hunt *et al.* (1994) Tapasak & Walther-Thomas (1999) Rankin *et al.* (1999) Willrodt & Claybrook (1995) Lundeen & Lundeen (1993) Saint-Laurent *et al.* (1998)	Tapasak & Walther-Thomas (1999) Obrusnikova *et al.* (2003)	McDonnell *et al.* (2003) Hunt *et al.* (1994) Tapasak & Walther-Thomas (1999) Rankin *et al.* (1999) Willrodt & Claybrook (1995) Saint-Laurent *et al.* (1998) Shinn *et al.* (1997)	Tapasak & Walther-Thomas (1999) Sasso & Rude (1988)

(*continued*)

Table 1. (*Continued*)

Cognition and learning		BESD		Sensory/physical		Communication	
Academic	Social	Academic	Social	Academic	Social	Academic	Social
Tapasak & Walther-Thomas (1999)				Mastropieri *et al.* (1998)			
Willrodt & Claybrook (1995)				Shinn *et al.* (1997)			
Mastropieri *et al.* (1998)							
Saint-Laurent *et al.* (1998)							
Shinn *et al.* (1997)							
Stevens & Slavin (1995)							

Key: ☐: positive; ▒: neutral; ▓: negative.

Table 2. Impact of inclusion across type of SEN: secondary schools

	Cognition and learning		BESD		Sensory/physical		Communication	
	Academic	Social	Academic	Social	Academic	Social	Academic	Social
Secondary	Block & Zeman (1996) Lundeen & Lundeen (1993) Cawley *et al.* (2002)	Block & Zeman (1996) Helmstetter *et al.* (1994) Shevlin & O'Moore (2000) Block & Zeman (1996)	Lundeen & Lundeen (1993) Cawley *et al.* (2002)		Lundeen & Lundeen (1993)			

Key: ☐: positive; ▒: neutral; ▓: negative.

to academic outcomes which were mainly neutral. There were four studies reporting positive outcomes and three reporting neutral overall findings. Two of these referred to the inclusion of pupils with severe to profound learning difficulties: Sasso and Rude (1988) and Sharpe *et al.* (1994).

There were few studies that investigated the effects of inclusion at *secondary* school level (Table 2). Block and Zeman (1996) reported neutral academic outcomes for the rest of the class when three students with moderate to severe learning and cognitive difficulties were included, while the same study also reported some negative outcomes for some other academic skills, as did Cawley *et al.* (2002). This later study, though, involved samples of students who collectively had a mixture of learning difficulties and BESD.

Behavioural, emotional and social difficulties

Of the studies that reported either positive or neutral academic and social outcomes when primary-aged pupils with BESD were included, some involved pupils with BESD as a sub-sample of the total sample of pupils with SEN or they were students with other difficulties (mainly learning) that had additional emotional/behavioural problems. Once again, the findings are mainly neutral or positive, at least in primary schools. Sasso and Rude (1988), for example, showed that, on sociometric measures, pupils without SEN made significant gains following the inclusion of pupils with SEN, many of whom had BESD. Alternatively, Willrodt and Claybrook (1995) found that scores on a standardized test of achievement were no different for pupils without SEN who had been working alongside pupils with SEN among whom were pupils with severe behaviour problems.

There were only two studies in which the included students had BESD as the main difficulty. The first study, by Hepler (1998), reported that primary school students benefited socially from their interactions with included students with emotional/behavioural difficulties. The second study, by Brown (1982), reported negative outcomes, both academic and social, for primary school pupils when their peers with BESD were included. He found that the greater the number of students with behavioural problems in the classroom, the more it influenced the classroom climate and learning environment in a negative way in terms of all students' cognitive abilities and social behaviour.

At the secondary school level, there were only two studies that reported the outcomes of the inclusion of pupils with BESD on the school population (Lundeen & Lundeen, 1993; Cawley, 2002), although in both studies pupils with BESD formed a part of the SEN group who were included. The findings are neutral or positive and, taken together with Brown's (1982) research, they suggest that the impact of inclusion of students with BESD on outcomes for other children remains at best uncertain.

Sensory and/or physical needs and communication and interaction

Some of the studies that reported positive or neutral academic outcomes for *primary* school pupils involved sub-samples of pupils with hearing impairments, health

impairments, speech and language disorders and multiple disabilities as the main type of SEN (Shinn *et al.*, 1997; Mastropieri *et al.*, 1998; Rankin *et al.*, 1999; Tapasak & Walther-Thomas, 1999). Rankin *et al.* (1999) studied the academic outcomes for small groups of three or four non-disabled pupils of including a child with learning and sensory difficulties and found that the non-SEN pupils performed equally well in both groups. In a much larger study involving 183 students without SEN, Tapasak and Walther-Thomas (1999) found no differences on pre- and post-test scores on a range of academic and social measures.

Apart from Lundeen and Lundeen (1993), whose findings were classed as *neutral*, there were no studies in secondary schools that considered the outcomes of the inclusion of pupils with sensory and/or physical needs or with communication/interaction difficulties.

Finally, it is interesting to note that there was no study that reported negative outcomes of the inclusion of students with sensory and/or physical needs and/or communication/interaction difficulties. A minor exception is the study by Huber *et al.* (2001) whose sample included some pupils with health impairments, but they were also reported to have major additional learning or behavioural/emotional needs that were more likely to have had an impact on the success of the inclusive placements.

Synthesis of findings

Table 3 is a synopsis of the findings in Tables 1 and 2 and shows the number and percentages of findings that were positive, negative and neutral when other factors were combined—academic and social outcomes, primary and secondary school and the SEN of the included pupils.

Overall, the findings suggest that there are no adverse effects on pupils without SEN of including pupils with special needs in mainstream schools, with 81% of the outcomes reporting positive or neutral effects (58% + 23%). Hence they suggest that placing children with SEN in mainstream schools is unlikely to have a negative impact on academic and social outcomes for pupils without SEN. These findings confirm the conclusions from other non-systematic reviews of the literature referred to earlier. A closer look at the findings reveals a number of further points:

- Tables 1 and 2 indicate that most of the outcomes related to primary-aged pupils (61 out of 71) and the main focus of the majority was on the impact of placing pupils in mainstream schools with difficulties in the area of cognition and learning. In the primary phase there were slightly more studies that focus on the

Table 3. Summary of key findings: 71 findings from 26 studies (adapted from Tables 1 and 2)

Positive findings	19	23%
Neutral findings	45	58%
Negative findings	7	9%
Total	71	

impact of placing pupils with BESD in mainstream schools than those with sensory and physical impairments. In general, there were few studies on the impact of placing pupils with difficulties in communication and interaction, particularly at the secondary level.

- There was slightly more emphasis on academic rather than social outcomes (50 out of 71 findings) and the majority of outcomes on the academic side were neutral.
- Some of the findings (e.g. Saint-Laurent *et al.*, 1998) suggested that the inclusion of pupils with SEN in primary schools can have a positive impact on the achievement of their mainstream peers particularly if the support offered to the pupil with SEN is well managed. This confirms some of the key findings from the EPPI-Centre review on the impact of paid adult support (Howes *et al.*, 2003).
- A higher proportion of outcomes in the secondary phase refer to the negative impact of placing pupils with SEN in mainstream schools—three out of ten outcomes as opposed to four out of 61 at the primary phase. This suggests that there may be more problems in managing inclusion successfully in secondary schools.
- Tables 1 and 2 indicate that negative outcomes are not related to one SEN type. However, there is one study (Brown, 1982), which focused exclusively on the impact on mainstream pupils of placing children with BESD in a school. His findings stressed the negative outcomes for pupils of such placements and confirm the views expressed in other studies that are not part of this review (e.g. Dyson *et al.*, 2004, Farrell *et al.*, 2007) that, compared to other pupils with SEN, pupils with BESD are more difficult to include successfully.
- In general, there was no association between the sample size used in the studies and the statistical significance of the findings. For example, the samples in Stevens and Slavin's (1995) and Saint-Laurent *et al.*'s (1998) studies were 1012 and 606 respectively and these yielded positive findings, as did Shinn's (1997) study where the sample was only 66. The study with the third largest sample, Huber *et al.* (2001), with $n = 477$, had neutral or positive results. However, studies with similar-sized samples had positive, negative or neutral results; for example, Brown's (1982) study, with $n = 153$, had negative results, while both the studies by Helmstetter *et al.* (1994), with $n = 166$, and Tapasak and Walther-Thomas (1999), with $n = 183$, had neutral results.

Conclusions and implications

There are a number of limitations that should be considered when judging the overall importance of the review's findings and in considering the implications for policy and practice. First, there were several studies where the main focus of the research was on the impact of inclusion for pupils with SEN and the element that addressed the impact on non-SEN peers was a minor part of the study. Although this is not, strictly speaking, a limitation, it might reflect the fact that the impact of inclusion on non-disabled pupils has tended to be viewed as being of secondary importance.

Second, and of more fundamental concern perhaps, is the slightly loose or uncertain way in which the term 'inclusion' was defined by the authors of the studies

that were reviewed. It was not always clear whether the inclusion arrangements involved full-time placements in mainstream class, whether and to what extent such placements were supported and whether pupils were withdrawn to other special classes for certain lessons, and for how long. All of this means that it is not possible to judge from the review whether or not certain types of inclusion arrangements were associated with particular academic or social outcomes. For example, it seems reasonable to hypothesize that the full-time placement in a mainstream class of pupils with BESD is more likely to have an impact on the achievements of their mainstream colleagues than placing such pupils in an 'on-site' unit where contact with mainstream peers is more limited. Unfortunately, it was not possible to explore this hypothesis from the studies reviewed here.

Third, in organizing the studies we used the categories from the Code of Practice as a way of grouping SEN types. These categories are specific to England and Wales and not used in other countries, in particular, the USA. Therefore we had to make a judgement as to which Code of Practice category the pupils in a study seemed to fit. Inevitably this process involved the review group in making a judgement, based on the description of the pupils' needs in each paper and it is possible that the classifications we arrived at did not reflect these needs accurately. In addition, given the fact that in many studies pupils with more than one type of SEN were included, it is difficult to determine which of these pupils had the most impact, positive, negative or neutral, on the achievements of their peers without SEN.

Fourth, the discussion sections in all the studies refer to the problem of attributing changes in pupil achievement solely to the placement of pupils with SEN in their schools. They acknowledge the possibility that these changes might have been due to other factors. These cause and effect problems are evident in a great deal of educational research and indicate the need to be cautious in interpreting findings.

Fifth, the overall balance of the studies was uneven. For example, almost all the research had been carried out in the USA, and given the different contexts—assessment arrangements, special needs support services, range of provision, etc.—it is important to be cautious in generalizing the findings of the review to the UK. In addition, there was a scarcity of studies that considered the impact of placing pupils with SEN on the academic and social outcomes for secondary-aged pupils. Furthermore, all but one of the studies was quantitative involving 'measures' of one kind or another. There appears to be a dearth of qualitative studies that have addressed our research question and which met the criteria for inclusion in this review.

Taken as a whole, the above limitations indicate that it is important to be cautious when coming to an overall conclusion about the findings of the review. In particular, the dearth of UK research in this area, the difficulty in determining the extent and range of special needs that the pupils experienced, the limited number of studies in secondary schools and the fact that the type of inclusive arrangement were not always clearly defined, are all relevant caveats that should be borne in mind when planning future policy and practice in this area.

Despite the limitations referred to above, this is the first systematic review of the literature that has focused on the relationship between the inclusion of pupils with SEN and the achievement of their peers without SEN. Other reviews, mostly from the

USA, have not been strictly systematic, nor have they been comprehensive and covered all types of SEN, academic and social outcomes and the full age range of pupils in mainstream schools. Furthermore, the overall conclusions from this review are in line with the findings from other literature referred to earlier and with the outcomes of the DfES-funded study on the relationship between inclusion and pupil achievement in English schools (Dyson *et al.*, 2004; Farrell *et al.*, 2007). Hence this review, and the findings from other research, point to the overall conclusion that, by and large, placing children with SEN in mainstream schools is unlikely to have a significant impact on overall levels of achievement among pupils without special needs.

From a policy perspective, therefore, the outcomes of this review and related research suggest that, in relation to the impact on the achievements of non-SEN pupils, the government, local authorities and schools should have no major concerns about pursuing the inclusion agenda.

This is not to say, of course, that policy-makers should ignore problems faced by schools in trying to become more inclusive and, at the same time, raise standards. There is evidence from other literature (Fox *et al.*, 2004) that some schools are concerned about inclusion, particularly for pupils with emotional and behavioural difficulties. In addition, other reviews of the literature (Harrower, 1999; Farrell, 2000) and findings from the case studies that were carried out as part of the DfES study (Dyson *et al.*, 2004) indicate that successful inclusion does not occur in a vacuum. Parents, teachers and pupils need to be fully committed to the idea; programmes of work have to be carefully planned and reviewed regularly; and support staff need to work flexibly as a team and receive appropriate support and training. If these general conditions are met, schools should feel able to include pupils with SEN without fearing that it will damage the achievements of the remaining pupils.

References

Affleck, J. Q., Madge, S., Adams, A. & Lowenbraun, S. (1988) Integrated classroom versus resource model: academic viability and effectiveness, *Exceptional Children*, 54(4), 339–348.

Ainscow, M. (1991) Effective schools for all: an alternative approach to special needs in education, in: M. Ainscow (Ed.) *Effective schools for all* (London, David Fulton).

Ainscow, M., Booth, T. & Dyson, A. (2006) Inclusion and the standards agenda: negotiating policy pressures in England, *International Journal of Inclusive Education*, 10(4), 295–308.

Audit Commission (2002) *Special educational needs: a mainstream issue* (London, Audit Commission).

Bear, G. G., Clever, A. & Proctor, W. A. (1991) Self-perceptions of non-handicapped children and children with learning disabilities in integrated classes, *Journal of Special Education*, 24(4), 409–426.

Beuter, A. (1984) Ethobehavioural analysis of the social behaviours of trainable mentally retarded and intellectually normal children in an integrated educational setting, *American Corrective Therapy Journal*, 38(1), 11–18.

Block, M. E. & Zeman, R. (1996) Including students with disabilities in regular physical education: effects on non-disabled children, *Adapted Physical Activity Quarterly*, 13(1), 38–49.

Brown, W. (1982) Classroom climate: possible effects of special needs on the mainstream, *Journal for Special Educators*, 19(1), 20–27.

Cawley, J., Hayden, S., Cade, E. & Baker-Kroczynski, S. (2002) Including students with disabilities into the general education science classroom, *Exceptional Children*, 68(4), 423–425.

Cignan, R. (Ed.) (2007) *Included or excluded?* (London, Routledge).

Daniel, L. G. & King, D. A. (1997) Impact of inclusion education on academic achievement, student behaviour and self-esteem, and parental attitudes, *Journal of Educational Research*, 91(2), 67–80.

Department for Education and Skills (DfES) (2001) *Special educational needs code of practice* (London, DfES).

Dyson, A. (1999) Inclusion and inclusions: theories and discourses in inclusive education, in: H. Daniels & P. Garner (Eds) *World yearbook of education 1999: inclusive education* (London, Kogan Page).

Dyson, A. & Howes, A. (forthcoming) Towards an interdisciplinary research agenda for inclusive education, in: P. Hick, R. Kershner & P. Farrell (Eds) *A pyschology for inclusion* (London, Routledge).

Dyson, A., Farrell, P., Polat, F., Hutcheson, G. & Gallanaugh, F. (2004) *Inclusion and pupil achievement* (London, DfES).

Dyson, A., Farrell, P., Polat, F., Hutcheson, G. & Gallanaugh, F. (2007) But what about others? Patterns of student achievement in inclusive schools, in: R. Cignan (Ed.) *Included or excluded?* (London, Routledge).

Dyson, A., Howes, A. & Roberts, B. (2002) *A systematic review of the effectiveness of school-level actions for promoting participation by all students: EPPI-Centre review version 1.1* (London, University of London Institute of Education, EPPI-Centre, Social Science Research Unit).

Evans, J. & Lunt, I. (2002) Inclusive education: are there limits? *European Journal of Special Needs Education*, 17(1), 1–14.

Farrell, P. (2000) The impact of research on developments in inclusive education, *International Journal of Inclusive Education*, 4(2), 153–162.

Farrell, P. (2006) Developing inclusive practices among educational psychologists: problems and possibilities, *European Journal of the Psychology of Education*, 21, 293–305.

Farrell, P. & Ainscow, M. (Eds) (2002) *Making special education inclusive: from research to practice* (London, David Fulton).

Farrell, P., Ainscow, M., Howes, A., Franham, J., Fox, S. & Davis, P. (2004) Inclusive education for all: dream or reality? *Journal of International Special Needs Education*, 7, 7–11.

Farrell, P., Dyson, A., Polat, F., Hutcheson, G. & Gallanaugh, F. (2007) Inclusion and achievement in mainstream schools, *European Journal of Special Needs Education*, 22, 131–147.

Fox, S., Farrell, P. & Davis, P. (2004) Factors affecting the successful inclusion of pupils with Down's syndrome, *British Journal of Special Education*, 4(4), 184–190.

Harrington, S. A. (1997) Full inclusion for students with learning disabilities: a review of the evidence, *School Community Journal*, 7(1), 63–71.

Harrower, J. K. (1999) Educational inclusion of children with severe disabilities, *Journal of Positive Behaviour Interventions*, 1(4), 215–230.

Helmstetter, E., Peck, C. A. & Giangreco, M. F. (1994) Outcomes of interactions with peers with moderate or severe disabilities: a statewide survey of high school students, *Journal of the Association for Persons with Severe Handicaps*, 19(4), 263–276.

Hepler, J. B. (1998) Social integration of children with emotional disabilities and nonhandicapped peers in a school setting, *Early Child Development and Care*, 147, 99–115.

Hillen, R., Houghton, S. & Bain, A. (1992) The effects of integrating children with special needs into mainstream classes: a case study, *Educational and Child Psychology*, 9(4), 52–56.

Howes, A., Farrell, P., Kaplan, I. & Moss, S. (2003) *The impact of paid adult support on the participation and learning of pupils in mainstream schools* (London, University of London Institute of Education, EPPI-Centre, Social Science Research Unit).

Huber, K. D., Rosenfeld, J. G. & Fiorello, C. A. (2001) The differential impact of inclusion and inclusive practices on high, average, and low achieving general education students, *Psychology in the Schools*, 38(6), 497–504.

Hunt, P., Staub, D., Alwell, M. & Goetz, L. (1994) Achievement by all students within the context of cooperative learning groups, *Journal of the Association for Persons with Severe Handicaps*, 19(4), 290–301.

Kalambouka, A., Farrell, P., Dyson, A. & Kaplan, I. (2005) *The impact of population inclusivity in schools on student outcomes* (London, University of London Institute of Education, EPPI-Centre, Social Science Research Unit).

Lindsay, G. (2007) Educational psychology and the effectiveness of inclusive education/mainstreaming, *British Journal of Educational Psychology*, 77, 1–4.

Lipsky, D. K. & Gartner, A. (1997) *Inclusion and school reform: transforming America's classrooms* (Baltimore, MD, Paul H. Brookes).

Lundeen, C. & Lundeen, D. J. (1993) *Effectiveness of mainstreaming with collaborative teaching* (Morgantown, WV, US Department of Education).

Lunt, I. & Norwich, B. (1999) *Can effective schools be inclusive schools?* (London, University of London Institute of Education).

Manset, G. & Semmel, M. I. (1997) Are inclusive programmes for students with mild disabilities effective? A comparative review of model programmes, *Journal of Special Education*, 31(2), 155–180.

Mastropieri, M. A., Scruggs, T. E., Mantzicopoulos, P., Sturgeon, A., Goodwin, L. & Chung, S. (1998) A place where living things affect and depend on each other: qualitative and quantitative outcomes associated with inclusive science teaching, *Science Education*, 82(2), 163–179.

McDonnell, J., Thorson, N., Disher, S., Mathot-Buckner, C., Mendel, J. & Ray, L. (2003) The achievement of students with developmental disabilities and their peers without disabilities in inclusive settings: an exploratory study, *Education and Treatment of Children*, 26(3), 224–236.

Moore, C., Gilbreath, D. & Maiuri, F. (1998) *Educating students with disabilities in general education classrooms: a summary of the research: report from the Western Regional Resource Centre, Eugene, Oregon and Alaska State Department of Education, Juneau* (ERIC Document Reproduction Service No. 419329).

Norwich, B. (2002) *LEA inclusion trends in England, 1997–2001: statistics on special school placements and pupils with statements in special schools* (Bristol, Centre for Studies on Inclusive Education).

Obrusnikova, I., Valkova, H. & Block, M. E. (2003) Impact of inclusion in general physical education on students without disabilities, *Adapted Physical Activity Quarterly*, 20(3), 230–245.

Peltier, G. L. (1997) The effect of inclusion on non-disabled children: a review of the research, *Contemporary Education*, 68(4), 234–238.

Petch-Hogan, B. & Haggard, D. (1999) The inclusion debate continues, *Kappa Delta Pi Record*, 35(3), 128–131.

Rankin, D. H., Logan, K. R., Adcock, J., Angelucci, J., Pittman, C., Sexstone, A. & Straughn, S. (1999) Small group learning: effects of including a student with intellectual disabilities, *Journal of Developmental and Physical Disabilities*, 11(2), 159–177.

Rarick, G. L. & Beuter, A. C. (1985) The effect of mainstreaming on the motor performance of mentally retarded and non-handicapped students, *Adapted Physical Activity Quarterly*, 2(4), 277–282.

Rustemier, S. & Vaughn, M. (2005) *Segregation trends: LEAs in England, 2002–2004* (Bristol, Centre for Studies on Inclusive Education).

Saint-Laurent, L., Dionne, J., Giasson, J., Royer, E., Simard, C. & Pierard, B. (1998) Academic achievement effects of an in-class service model on students with and without disabilities, *Exceptional Children*, 64(2), 239–253.

Salend, S. J. & Duhaney, L. M. G. (1999) The impact of inclusion on students with and without disabilities and their educators, *Remedial and Special Education*, 20(2), 114–126.

Sasso, G. & Rude, H. A. (1988) The social effects of integration on non-handicapped children, *Education and Training in Mental Retardation*, 23(1), 18–23.

Sharpe, M. N., York, J. L. & Knight, J. (1994) Effects of inclusion on the academic performance of classmates without disabilities: a preliminary study, *Remedial and Special Education*, 15(5), 281–287.

Shevlin, M. & O'Moore, A. M. (2000) Creating opportunities for contact between mainstream pupils and their counterparts with learning difficulties, *British Journal of Special Education*, 27(1), 29–34.

Shinn, M. R., Powell-Smith, K. A., Good R. H. III & Baker, S. (1997) The effects of reintegration into general education reading instruction for students with mild disabilities, *Exceptional Children*, 64(1), 59–79.

Skrtic, T. M. (1991) The special education paradox: equity as the way to excellence, *Harvard Educational Review*, 61(2), 148–206.

Staub, D. (1996) Inclusion and the other kids, *Learning*, 25(2), 76–78.

Staub, D. (1999) *On inclusion and the other kids: here's what research shows so far about inclusion's effect on non-disabled students.* Unpublished report, National Institute for Urban School Improvement, Education Development Centre, Newton, MA.

Staub, D. & Peck, C. A. (1994) What are the outcomes for non-disabled students? *Educational Leadership*, 52(4), 36–40.

Stevens, R. J. & Slavin, R. E. (1995) The cooperative elementary school: effects on students' achievement, attitudes, and social relations, *American Educational Research Journal*, 32(2), 321–351.

Tapasak, R. C. & Walther-Thomas, C. S. (1999) Evaluation of a first-year inclusion programme: student perceptions and classroom performance, *Remedial and Special Education*, 20(4), 216–225.

Warnock, M. (2005) *Special educational needs: a new look* (London, Philosophy of Education Society of Great Britain).

Willrodt, K. & Claybrook, S. (1995) *Effects of inclusion on academic outcomes* (Washington, DC, US Department of Education).