



REVIEW

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Supporting pupils with emotional and behavioural difficulties (EBD) in mainstream primary schools: a systematic review of recent research on strategy effectiveness (1999 to 2002)

**This review is supported by the Teacher
Training Agency (TTA) to promote the use of
research and evidence to improve teaching
and learning**

*Review conducted by the Behaviour Management
(Institute of Education) Review Group*

PREFACE

Authors and review team

Angela Harden*, James Thomas*, Jennifer Evans**, Margaret Scanlon*, Jennifer Sinclair*.

Organisation

*Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre), Social Science Research Unit (SSRU), Institute of Education, University of London.

**Educational Foundations and Policy Studies, Institute of Education, University of London.

Contact details

Angela Harden
EPPI-Centre
SSRU
18 Woburn Square
London WC1H 0NS
tel: 020 7612 6246
fax: 020 7612 6400
e-mail: a.harden@ioe.ac.uk.

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SUMMARY

Background

Behaviour management is high on the education policy and practice agenda in England and the rest of the UK, as well as other areas of the world. Whole school policies are advocated for managing the behaviour of all pupils, with specialist approaches nested within these for children who might be deemed to have 'emotional and behavioural difficulties' (EBD) or 'social, emotional and behavioural difficulties' (SEBD). This group of children raises interesting issues for the intersection of behaviour management policies, inclusive schooling and the drive for raising academic standards. A combination of government policies in England has encouraged schools to include as many pupils as possible within mainstream schools and at the same time to reach ever-higher academic standards.

The term EBD is a broad label which has been used to group a range of more specific difficulties such as behaviour which interferes with a child's own learning or the learning of their peers; signs of emotional turbulence (e.g. unusual tearfulness, withdrawal from social situations); and difficulties in forming and maintaining relationships. Definitions of EBD are contested and there is a need to consider the role that societal, family and school environments play in creating and ameliorating children's social, emotional and behavioural problems.

Many different strategies for teachers to support children have been advocated. A variety of groups are likely to have an interest in which of these strategies are effective, for whom, and in which circumstances: school staff (e.g. teachers, special educational needs co-ordinators), parents, and children themselves. Like qualified teachers, trainee teachers and initial teacher education providers also need to know which strategies are effective, for whom, and in which circumstances. New standards for qualified teachers and requirements for initial teaching training also state that teachers should be able to learn from both research evidence and reflective practice. This review aims to help trainee primary school teachers (and their trainers) in their efforts to fulfil these standards. Access to good quality research findings about which strategies appear to be effective can augment teachers' 'craft knowledge' alongside reflection and theory.

Aims and review questions

This document reports on a piece of work which aimed to develop further an earlier systematic review on the effectiveness of strategies for supporting children with emotional and behavioural disorders in mainstream classrooms within primary schools (Evans *et al.*, 2003). The earlier review had been conducted with a range of users in mind (e.g. teachers, psychologists, special educational needs co-ordinators, students and parents). The piece of work reported in this document was conducted with an additional set of users in mind: those from within the initial teacher education community and trainee teachers. It is therefore complementary to our earlier systematic review. The current review is one of two reviews commissioned by the Teacher Training Agency (England) on behaviour

management. The other review focuses on theories and learning behaviour (Powell and Todd, 2003).

Our primary review question was 'What are effective strategies for supporting pupils with EBD in mainstream primary classrooms?'. We also wanted to address a secondary question related to teacher training, particularly in the context of initial teacher education: 'What are effective ways of supporting trainee primary school teachers to use the above strategies?'. However, we found few studies which could address this question, and so our review primarily addressed the first question. Our advisory group (which included providers of initial teacher education) considered that answering the first question would be a valuable way for them to provide support for primary school teacher trainees.

The intended population focus of our review was primary-aged children, their teachers or teacher trainers. The setting focus was classrooms within mainstream, rather than special, schools. However, our focus was not on special classrooms (e.g. resource rooms) within mainstream schools. The scope of our review covered children whose behaviours or emotional difficulties were not so extreme that they could not be taught in mainstream classrooms, but were sufficiently frequent to require specific interventions from teachers or other adults so that they could remain in the mainstream classroom.

We were interested in strategies, that could be implemented by primary school teachers either working on their own or in collaboration with other school staff. In terms of supporting children labelled as having EBD, to support children to remain in mainstream classrooms. Our review was not concerned with strategies using drug or psychiatric treatments, but with strategies which provide children with information, social support or skills training. Our intended intervention scope covered strategies which involved making changes at the whole class level (rather than individuals within classes) and to the physical or social organisation of the classroom. We were also concerned with programmes which attempted to support or train teachers in the use of these strategies. Our review was concerned with studies evaluating outcomes for children or teachers of the above types of strategies.

Methods

We sought reports of studies published between 1999 and 2002 which evaluated the effectiveness of strategies for supporting primary-aged children (usually aged between aged four and 11-years-old) with emotional and behavioural difficulties in mainstream primary schools or evaluated ways of supporting teachers to use these strategies. We excluded studies which: evaluated strategies for general discipline problems; involved children in mainstream schools who were taught entirely in special classes (e.g. resource rooms); or did not report the full results of an evaluation. We also excluded studies not published in the English language. We searched for studies on five electronic bibliographic databases using a wide range of terms for 'emotional and behavioural difficulties' combined with terms for the primary phase of education. These searches were supplemented by handsearches of 20 journals and by scanning the reference lists of already identified relevant studies.

The remainder of the review was carried out in two main stages: (i) a descriptive mapping of all studies identified (systematic map); and (ii) an in-depth review of a subset of these studies.

For the systematic map, the EPPI-Centre core keywording strategy (EPPI-Centre, 2002a) was used to code studies according to the country in which the study was carried out; the population studied; the age and sex of learners; and the evaluation design and methods. These codes were supplemented with review-specific codes covering the theoretical model underpinning the strategy under investigation; the type of behaviour/outcome the strategy is trying to change; the people involved in implementing the strategy; whether the study focused on teacher training; and the sample size. These were used to produce a descriptive map of all studies meeting our inclusion criteria.

We developed a narrower set of inclusion criteria for the in-depth review. The EPPI-Centre standardised set of data-extraction guidelines were applied to all studies meeting the criteria for the in-depth review (EPPI-Centre, 2002b). These guidelines enabled reviewers to extract data on the development and content of the strategies evaluated; the design and findings of the studies (including recruitment and characteristics of the sample); and details of any integral process evaluation (e.g. on factors influencing the implementation of the intervention, the acceptability of the intervention to teachers and pupils). The methodological quality of each study was assessed and reviewers made a judgement of the 'weight of evidence' the study could provide for answering the review question (high, medium, or low).

Findings of studies were synthesised according to the theoretical framework which underpinned the strategies evaluated and the methodological quality of the evaluation.

Findings

Our searches identified 1,312 citations from bibliographic databases and a further 74 papers or citations from handsearches or citation chasing. However, after screening, only 51 studies met our inclusion criteria. This represents four percent of all citations screened. Of the 51 studies, ten were described in unpublished reports.

Systematic map

The majority of studies (35/51) were conducted in the US although we identified nine from the UK. The strategies which have been most frequently evaluated by the studies we identified were those based on cognitive behavioural models and implemented by teachers and/or psychologists, social workers, parents, or children. Although overall, similar numbers of studies evaluated strategies targeting the four types of behaviours associated with EBD that we coded for (aggressive, disruptive, off-task and social difficulties), strategies evaluated outside the US tended to target social difficulties more often. This may be partly explained by the differences in the theoretical models which most frequently underpin the strategies evaluated in different countries. Outside the US, strategies based on behavioural models do not appear to be very popular; none of the studies in the UK evaluated these kinds of strategies compared to 13 of the 35 studies in the US. However, studies conducted in the UK were much more

likely to evaluate strategies based on a psychotherapeutic model (seven of the nine UK studies compared with only one of the 35 US studies).

It is encouraging to note that over a third of studies evaluated strategies by comparing groups receiving the particular strategy under test with groups which did not. This can help to rule out the possibility that any improvement in outcomes (e.g. aggressive behaviour) is simply due to the passage of time or other events. A quarter of studies used random methods to allocate children or teachers. This can help to rule out the possibility that any improvement in outcomes is simply due to known or unknown differences between the two groups of children or teachers being compared. Similar proportions of studies across countries involved the use of random allocation to assign groups of children or individuals. Only one-quarter of the studies combined the strengths of collecting both 'qualitative' and 'quantitative' data. All randomised controlled and other trials in the UK collected qualitative data to examine processes alongside quantitative estimates of impact compared with only two of the 12 randomised controlled and other trials in the US. Sample sizes were a cause of concern. Just under half of the studies employed sample sizes of fewer than 20 children or teachers.

Our map suggested a tiny potential evidence base for specifically informing ways of supporting trainee teachers who may encounter children with EBD in their primary school classrooms. Only four out of our 51 included studies were judged by reviewers to evaluate ways of supporting teachers to implement strategies. Only one of these studies was from the UK and none focused specifically on initial teacher education (ITE). This is clearly a gap for research commissioners in the ITE sector.

In-depth review

Owing to the time constraints we were restricted in the number of studies we could review in-depth. Following advice from our advisory group, we decided to focus our efforts on studies conducted in the UK, which were more likely to yield information that would be contextually relevant compared with studies conducted in the US. From our pool of UK studies we excluded those which did not employ adequate controls in their evaluation design (i.e. use of a control or a comparison group or a reversal design). Four of the nine studies fell out on this criterion and five studies went on to the in-depth review.

Our five studies consisted of one which evaluated the impact of 'nurture groups' to support positive emotional and social growth and cognitive development amongst children aged four- to 10-years-old with social, emotional and behavioural difficulties; an evaluation of the operation and impact of a parent and school behaviour action project (PASBAC) on children aged five- to 10-years-old with EBD; an evaluation of the 'communication opportunity group scheme' (COGS) to improve literacy and behaviour amongst seven- to 15-year-olds with EBD; an evaluation of the impact of establishing a therapeutic 'quiet place' within schools for four- to 11-year-olds with EBD; and an evaluation of Project CHANCE, a community-based mentoring scheme for children aged six- to 10-years old with EBD.

None of these studies were judged to have provided a high weight of evidence for answering the review question. Findings from the in-depth review highlight the fragmentary nature of the evidence base from the five UK studies conducted from 1999 to 2002. This finding is in line with our earlier review which found only four

studies conducted in the UK and published up to 1999 . The main implications from this part of the review therefore concern the future development of an evidence base and these are described in the next section. First we provide more detail on the five studies included in the in-depth review.

Three studies had the potential to provide evidence on the effectiveness of strategies based on a psychotherapeutic model. For two of these studies, authors concluded that there were positive effects for children. One study evaluated 'nurture groups' and the authors concluded that children attending 'nurture groups' showed improved levels of emotional and behavioural functioning. Another study evaluated the 'quiet place' (a room which provided a therapeutic environment) and the study author concluded that children who had attended showed improved levels of development. The authors of the third study evaluating mentors who aimed to develop a trusting and supportive relationship with children concluded that there were no differential effects on behaviour amongst children who received mentoring compared with those who did not. All three studies were judged by reviewers to have provided a medium weight of evidence for answering the question of this review. For each of these studies, reviewers judged results to be inconclusive due to small sample sizes for the 'quiet place' and the mentoring project, or to the interim nature of findings for the 'nurture groups'.

Three studies had the potential to provide evidence on the effectiveness of strategies based on a cognitive-behavioural model. For two of these studies, authors concluded that there were positive effects for children. One study evaluated a combined systemic strategy (parents, teachers and support staff working in collaboration) with cognitive behavioural elements whereby parents were trained to develop a range of skills, such as play, boundary setting, establishing rules and selective reinforcement, using naturally occurring situations within the home. These study authors concluded that the strategy was effective for improving the behaviour of children. Another study evaluated a strategy based on the premise that problem behaviour in school could be improved by improving children's communication skills using a specific programme developed by the author. This author concluded that there were positive effects on the behaviour of children receiving a communication skills intervention. As described above, the authors of the evaluation of the mentoring strategy (which also aimed to provide children with solution-focused cognitive-behavioural interventions as well as a secure and supportive relationship for children) concluded that there were no differential effects on behaviour amongst children who received mentoring compared with those who did not.

Again reviewers disagreed with author conclusions about the effects of cognitive-behavioural strategies. The study evaluating the strategy involving parental support workers was judged by reviewers to have provided a low weight of evidence and hence they judged the strategy to be unclear in its effects. Reviewers judged the study evaluating the communication skills strategy as providing a low weight of evidence. Despite this study using a strong design (a randomised controlled trial), the way the study judged the effectiveness of the strategy on children's behaviour was via anecdotal accounts of improvements by teachers and parents of children in the intervention group. Although the evaluation of the mentoring project was deemed by reviewers to provide a medium weight of evidence, reviewers judged the results of the study to be inconclusive due to a small sample size.

Only one study had the potential to provide evidence on the effectiveness of strategies based on a systemic model – the strategy involving parent support workers as described above. This study was judged to have provided a low weight of evidence for answering the review question.

None of the five studies evaluated strategies based on a behavioural model.

Implications

Based on the studies included in this review, the evidence base for recommending effective strategies that teachers could draw on to support pupils with emotional and behavioural difficulties in mainstream classrooms is limited. It is even smaller for informing ITE in this area. However, because of the definitional problems associated with EBD, it is likely that our search strategies missed studies which would have met the inclusion criteria for this review. Our searches were designed to identify literature described as being focused on EBD rather than the overlapping literatures on aggression, conduct disorder or violence prevention; see, for example, a recent systematic review on violence prevention by Mytton *et al.* (2002). The studies in this review therefore represent a particular slice of all potentially relevant literature and our conclusions must be interpreted within this context. In addition, there was a bias towards finding studies in educational and psychological journals in our search strategy, and this may have limited the range of theoretical models underpinning the strategies evaluated by the included studies.

For policy and practice

There are currently many new initiatives relevant to supporting pupils with EBD in mainstream primary classrooms. For example, 'Behaviour Improvement Programmes' (BIPs) have been implemented in 61 LEAs across England (34 in phase 1 and 27 in phase 2). A number of different strategies are suggested as part of this programme: for example, multi-agency support for pupils at risk of EBD, Learning Mentors and 'extended schools' with activities such as Breakfast Clubs. It is clear from our review that many of these strategies have not yet been evaluated by rigorous research, but are experimental and will need to be evaluated if they are to be used as a basis for policy development in this area.

Nevertheless, the strategies and the theoretical models underpinning them, add to a broader understanding of emotional and behavioural difficulties and the types of approaches that are currently being implemented in UK schools. The UK studies published between 1999 and 2002 suggest a move in the UK towards strategies using a 'whole school' approach for their successful implementation. These studies have also shown a trend towards involving parents in the interventions and also towards working actively with parents to improve their relationship with their children. Thus, primary school trainee teachers should expect to work in a multi-disciplinary way with colleagues in school and from other services to provide support for the pupils with EBD in their classrooms.

For research

Given the lack of clarity about the effectiveness of a number of widely-used strategies, we recommend that practitioners and researchers work in partnership

to carry out rigorous studies of the strategies currently used. Such partnerships need actively to include children and parents and take account of their views on the appropriateness of strategies. There is a clear need for research evaluating the effectiveness of different ways of supporting or preparing primary school teachers (trainee or otherwise) to include children with emotional and behavioural difficulties in their classrooms. Again researchers need to work in collaboration with ITE providers as well as trainee teachers.

From the strengths and weaknesses identified in the methods of the studies included in the in-depth review, a number of recommendations can be made about how research which evaluates the effectiveness of strategies should be carried out. We recommend the following:

- the use of more than one group so that one group receiving the strategy under evaluation can be compared with a group not receiving the intervention;
- the use of random allocation (where possible) of children or classes or schools to groups;
- that careful attention is paid when random allocation is not possible, to obtaining groups that are matched on socio-demographic characteristics and levels of emotional and behavioural problems;
- that more effort is invested to obtain measures of outcome over the long term, potentially into adulthood, when appropriate;
- the use of larger sample sizes to ensure that studies are adequately powered to detect the effects of strategies;
- the collection and appropriate use of 'qualitative' process data alongside 'quantitative' data estimating the effects of strategies.

As it is impossible to assess the reliability of the results of evaluation studies unless there is a clear description of the methods used for the evaluation, we also recommend that more careful attention needs to be paid to providing full details of research methods in research reports (e.g. data-collection tools, data analysis methods and sample characteristics). Publications should also make this information available, either in the published paper, or as a technical appendix available from the authors. Journal editors need to play a role in ensuring this.

1. BACKGROUND

1.1 Aims and rationale for current review

Behaviour management is high on the education policy and practice agenda in England and elsewhere in the UK, as well as in many other countries. Whole school policies are advocated for managing the behaviour of all pupils, with specialist approaches nested within these for children who might be deemed to have ‘emotional or behavioural difficulties’ (EBD) or ‘social, emotional and behavioural difficulties’ (SEBD). This group of children raise interesting issues for the intersection of behaviour management policies, inclusive schooling and the drive for raising academic standards. This document reports on a piece of work which aimed to develop a previous systematic review on the effectiveness of strategies for supporting children with emotional and behavioural disorders in mainstream classrooms within primary schools (Evans *et al.*, 2003). The previous review had been conducted with a range of users in mind (e.g. teachers, psychologists, special educational needs co-ordinators, parents and pupils). This review was conducted with an additional set of users in mind: those from within the initial teacher education community and trainee teachers. Like qualified teachers, trainee teachers and initial teacher education providers need to know which strategies are effective, for whom, and in which circumstances. The new standards for qualified teachers and requirements for initial teacher training require that they ‘know a range of strategies to promote good behaviour’ (DfES/TTA, 2002: 8). These standards also state that teachers should be able to learn from both research evidence and reflective practice. This review aims to help teachers (and their trainers) in their efforts to fulfil these standards. Although we identify worldwide research in this review, our focus is primarily on the UK.

1.2 Definitional and conceptual issues

1.2.1 Defining EBD

There is a lack of clarity about which particular groups of children and which behaviours constitute EBD and where ‘behaviour problems’ and the strategies to contain them shade off into those concerned with more general discipline problems. At the other extreme, there is lack of clarity as to when behaviour difficulties in school indicate some underlying mental health problems that need medical or psychiatric intervention.

EBD has been defined in Circular 9/94 (DfEE, 1994) and is contained in the Code of Practice for the identification and assessment of special educational needs. These suggest that these difficulties may become apparent in the following ways:

- age-inappropriate behaviour or that which seems otherwise socially inappropriate or strange;
- behaviour which interferes with the learning of the pupil or their peers (e.g. persistent calling out in class, refusal to work, persistent annoyance of peers);
- signs of emotional turbulence (e.g. unusual tearfulness, withdrawal from social situations);

- difficulties in forming and maintaining positive relationships (e.g. isolation from peers, aggressiveness to peers and adults).

Definitions of EBD are contested. Some educationalists have highlighted how behavioural problems may be the result of a clash between the values and expectations of school systems and the values that children acquire in their homes and community. There is therefore a need to acknowledge the complex relationship between the societal, family and school environments and the part that each of these contexts plays in creating and ameliorating children's social, emotional and behavioural problems (Weare, 2000). Gender and 'race' have been found to be key factors in the identification of certain groups of children as having EBD (Daniels *et al.*, 1999) and this has led to a greater focus on social justice and equal opportunities in framing the context within which support for pupils is offered.

This review acknowledges the importance of these debates around EBD and views EBD as a continuum from infrequent episodes of problem behaviour which any child might be expected to experience to more persistent problems indicating an underlying medical or psychological condition. Our review was focused on the middle range of this continuum and on studies in which particular children within mainstream classrooms are identified as showing habitual behavioural or emotional problems. Our review was also influenced by a more context-based approach to EBD, where behaviour is seen as a response to particular situations and thus the ways in which schools and classrooms are organised can have a significant impact on EBD.

1.2.2 Theories and strategies of support

There have been many attempts to provide advice and strategies to support teachers to maintain disruptive children, including those with EBD, in their classes (for example, Chazan, 1993; Cooper, 1989; Kolvin *et al.*, 1976; Laslett, 1982; Whedall and Panagopoulou-Stamatelatos, 1985). These strategies are located within a range of psychological and pedagogic paradigms. Some have advocated behavioural approaches using rewards and sanctions to promote acceptable behaviour. Others have suggested that psycho-dynamic approaches focusing on early childhood experiences are more effective. There have been a number of studies which stress the importance of systemic or 'whole school' approaches to behaviour management. Social justice and equal opportunities have also been influential in framing the context within which support for pupils is offered.

1.3 Policy and practice background

1.3.1 Supporting children with EBD

There is an increasing concern among practitioners in the UK about the levels of emotional and behavioural difficulties (EBD) of pupils in primary schools (Evans and Lunt, 2001). According to OfSTED reports, one in 12 secondary schools and one in 100 primary schools now have endemic poor behaviour problems (OFSTED, 2003). In addition to the impact on pupil achievement, research has cited deficits in the working atmosphere in the classroom together with problems of disruption and disaffection as factors in explaining teacher recruitment and retention problems, and low morale, stress and illness (Haydn, 2002).

Traditionally the system in England has made provision for disruptive pupils in 'special' schools and latterly through Pupil Referral Units (Didaskalou and Millward, 2002). However, in recent years in England and Wales, the emphasis of government policy has been on the inclusion of children with special educational needs (SEN) in mainstream classrooms (DfEE, 1997) and the reduction in the numbers of children excluded from school for disciplinary reasons. Both of these groups will include children with EBD. As part of this policy initiative, there is to be a more inclusive approach to planning and provision, with emphasis on multi-agency collaboration and early intervention and prevention (Tod, 1999). The aim is to reduce the number of pupils needing long-term 'extra or different' provision via statementing and special school placement.

Thus, there has been pressure both on schools and local education authorities (LEAs) to find new ways of enabling teachers to support children with EBD in order that they can be included in the ordinary classroom with their peers. LEAs have been required to draw up Behaviour Support Plans (BSP), which give details of the ways in which they will 'provide advice and resources to relevant schools for promoting good behaviour and discipline, and dealing with pupils with behaviour problems' (DfEE 1998:4). There have, however, been some criticisms of this policy. Garner (2000a) points out that LEAs have been gradually stripped of financial resources with the result that many are unable to meet the demands placed on them to secure effective provision for pupils with behaviour problems. Garner's research suggests that the BSPs drawn up by LEAs generally follow the pattern of guidance provided by the DfEE (DfEE 1998), although there are several notable omissions in some plans. He also found wide variations in the way in which BSPs have been perceived by teachers working with children with behaviour problems; significantly some regarded BSPs as little more than reiterations of previously attempted initiatives. Policy has also been criticised for creating an environment in which the primary focus is on the needs of those pupils with the most obvious and pressing behavioural needs, whilst those with emotional problems are largely overlooked (Didaskalou and Millward, 2002).

1.3.2 Behaviour management

Improved pupil behaviour is seen as critical not only for teaching and learning but also for improved teacher recruitment and retention, which in turn leads to further improvements in standards. The DfES has described this situation as a 'virtuous circle' whereby better behaviour results in better teaching and learning, and vice versa (Clark, 2003). The DfES has set out a model – the behaviour and attendance improvement pyramid – identifying different forms of support. This model outlines a hierarchy of support from the basics of positive behaviour and attendance in every school, to extra individual support, intensive support and, finally, alternative provision out of school. The staff and specialist units involved in each of these stages are also identified, including, for example, learning support units, behaviour and education support teachers, and learning mentors (for the 'extra individual support' and 'intensive support stages'); education welfare officers and pupil referral units (for alternative provision out of school). In this model, the basics of positive behaviour and attendance in every school are supported by whole school behaviour and attendance policies, and by teacher training.

1.3.3 Initial teacher education

In a survey of secondary school teachers in England, Merrett and Wheldall (1993) found that nearly three-quarters of teachers reported that they did not feel confident in matters of behaviour management and wanted further specialised training in this area for themselves and for their colleagues in initial teacher education. Garner (2000b) suggests that while newly qualified teachers (NQTs) are expected to play a key role in implementing inclusive initiatives in education, many of them have not been prepared for this task. He argues that there has been a chronic failure to address widespread shortcomings in SEN-focused teacher education and that, if inclusion policy is to be successfully implemented, it needs to be considered in the light of the prevailing 'real-world' context of initial teacher education (ITE). Whilst the 'policy rhetoric' is of inclusion, the reality is that even peripheral coverage of practical SEN issues in teacher education are absent in many ITE programmes.

Some of the policy initiatives of the 1990s are dismissed as 'worthy but largely inconsequential' (Garner, 200b: 112) because there was neither an accompanying emphasis on SEN/inclusion issues within ITE programmes, nor induction opportunities for NQTs to debate inclusive policy and practice. Garner suggests that there is a preoccupation with subject-knowledge and that ITE providers are curtailed by the prescriptive nature of the training curriculum and its inspection. The shift towards school-based training is another area of concern in terms of the advancement of an inclusive agenda amongst trainee teachers. Less time is now available for consideration of important conceptual issues in SEN, whilst students rely on picking up information from the prevailing work patterns, culture and ethos of the school in which they are placed. During their placement, many student teachers receive little direct input on practical matters relating to SEN and are much less likely to have opportunities to debate the principles and practicalities of inclusion. In addition, the quality of the support and guidance which student teachers receive in schools may vary considerably. The widespread adoption of 'permeation' – a process by which SEN matters are embedded within other parts of a teacher training course – has led to a further dilution of SEN inputs into ITE courses.

In order to ensure that a more amenable context for the development of inclusion is established, Garner suggests a number of things need to happen, including the following:

- A comprehensive and independent investigation into the way in which student teachers are trained. Data are likely to confirm the chronic failure of the system and provide the evidential basis for radical rethinking.
- All students should receive a substantial core input in SEN/inclusion, and they should be provided with mandatory and structured opportunities to experience special/inclusive education in practice. Both mainstream and special schools need to be drawn into such practice in order to ensure that students benefit from professional expertise.
- All ITE provision in SEN/inclusion should be planned and delivered at least in part by, or in consultation with, tutors who have specific experience and qualifications in the field of SEN.
- School-based programmes should place greater priority on SEN/inclusion issues; adequate time and funding should be made available to ensure that all students can receive structured input from SENCOs and others.

- During the induction phase of a teacher's career, this emphasis must be maintained. Induction programmes should require a set of core SEN and inclusion themes or dilemmas to be explored by new teachers.

Tod (2003) has identified a number of factors which trainee teachers need to take into account in order to understand and respond to problem behaviour. Firstly, they need to be aware that behaviours do not occur in isolation but are the result of the relationship of the learner with him/herself (e.g. in terms of self-esteem), with others and with the curriculum. Positive relationships are seen to facilitate both learning and social participation. Teachers also need to consider how behaviour management forms an intrinsic part of teaching and learning. Tod suggests that there needs to be:

- increased professional knowledge of the theoretical underpinnings of problem behaviour
- increased skills in relationship management and policy development
- greater integration of curriculum subject areas with PSHE and citizenship
- enhanced assessment to include social, emotional and behavioural indicators of learning.

Dooner (2003) has argued that training should develop an understanding that pupil behaviour has a variety of triggers, some of which teachers can have an influence over, including how they prepare and project themselves as well as the subject. At the same time, it is important to be aware that even seemingly competent and experienced teachers are also ignored, confronted and challenged by pupils. Teachers' emotional responses to challenge are seen as critical. Haydn (2003) has looked at the role which educational research could play in training teachers in classroom management. In particular, he raises important questions concerning: what sort of research would be of use to trainee teachers; the role of reflective practice; the role of advice from 'seasoned combat veterans', the relevance of up-to-date 'what works?' information; and the interaction with problematic information.

1.4 Research background

Although there have been many attempts to provide advice and strategies to support teachers to maintain disruptive children in their classes (including those with EBD), such advice has not been informed by a systematic review of the research evidence. Much of what teachers do in the classroom is based on their 'craft knowledge', of what works for them. But, as Cooper and colleagues acknowledge, this can be augmented and strengthened by reflection and by theory (Cooper *et al.*, 1994). It can also be augmented by access to good quality research findings about which strategies appear to be effective.

In order to address this, in 1999 we began to undertake a review of the effectiveness of strategies for supporting pupils with EBD in mainstream primary classrooms (Evans *et al.*, 2003). A total of 28 studies met the inclusion criteria in this review and their findings were synthesised according to the theoretical model underpinning the intervention (behavioural, cognitive-behavioural, systemic or 'psycho-dynamic') and the type of behaviour the interventions targeted (off-task, disruptive, aggressive or 'social difficulties'). It was found that behavioural interventions, based on token systems involving the whole class or group, appear to be effective in controlling off-task and disruptive behaviour in the short term. A

systems approach was shown to have a positive effect on time on task, particularly for more distractible children. A variety of strategies for teaching social skills were found to be effective in the short to medium term (over several months). However, a lack of good quality studies in some areas meant that the review also revealed many unanswered questions. For example, there was no good evidence of the effectiveness of circle time or of 'nurture groups', two interventions that appear to be increasingly advocated and adopted by schools in the UK.

In addition to this review, we are aware of three other reviews using systematic review methods which have assessed the effectiveness of interventions, with samples of children which include, or are solely based on, children who could be considered to have emotional and behavioural difficulties. Quinn *et al.* (1999) examined the effectiveness of a specific type of strategy – social skills training interventions – for improving social skills (e.g. social problem solving) or reducing problem behaviours (e.g. disruptive behaviour) amongst children and young people with emotional and behavioural disorders. They found a small but significant positive effect from this type of intervention across the 35 included studies, with bigger effects found for interventions focused on teaching and measuring specific social skills compared with more global interventions. Stage and Quiroz (1997) examined the effectiveness of school-based interventions for reducing one specific outcome – disruptive classroom behaviour – amongst children and young people in mainstream schools. Fifty-four of the 99 studies in their review included children and young people who had been labelled with specific problems (e.g. attention deficit activity disorder). They found a bigger positive effect size than that reported by Quinn *et al.* (1999), stating that school-based interventions can reduce disruptive behaviour for, on average, 78 percent of the children or young people receiving the intervention. Although the review by Stage and Quiroz focused on mainstream schools, some of the interventions evaluated by their included studies took place in a special resource room, not the mainstream classroom, and this distinction between intervention settings was found to be related to effectiveness. The review authors concluded that '...students treated in self-contained classrooms were more likely to evidence reductions in disruptive classroom behaviors compared to students treated in regular classroom settings' (p 333).

School-based violence prevention interventions and aggressive behaviour were the focus of the third review (Mytton *et al.*, 2002). This review examined the effectiveness of such interventions for reducing aggressive behaviour, school/agency responses to acts of aggression, or violent injuries amongst children and young people who had been identified as 'at-risk' for aggressive behaviour. Across the 44 included studies, a small but significant positive effect of the interventions were found for reducing aggression, with greater effectiveness observed for interventions targeting young people aged 11 or over and for interventions administered to mixed-sex groups rather than to boys alone.

The four previous reviews described above all differ in their stated scope and aims. Our review was the only one to focus solely on children of primary school age and appears to have a wider scope in terms of the types of interventions covered and the outcomes assessed. It was also the only review have an explicit focus on supporting children with EBD in mainstream classrooms. None of the four previous reviews, however, were undertaken with the aim of informing teacher training in this area.

1.5 Authors, funders and other users of the review

The development of our previous review on supporting children with emotional and behavioural difficulties was funded by the Teacher Training Agency in England which is interested in developing the evidence base for initial teacher training. They prioritised ten topic areas for review, one of which was behaviour management. Two reviews on behaviour management were commissioned. The other review focuses on theories and learning behaviour (Powell and Todd, 2003). As indicated above, key audiences for this review are trainee teachers and providers of initial teacher education.

1.6 Review question

Our primary review question was 'What are effective strategies for supporting pupils with EBD in mainstream primary classrooms?'. We also wanted to address a secondary question related to teacher training, particularly in the context of initial teacher education: 'What are effective ways of supporting primary school teachers to use the above strategies?'. However, as detailed later in this report, due to finding few studies which could address this question, this review primarily addresses the first question. Our advisory group, which included ITE providers, considered that answering the first question would be a valuable way to provide support for primary school teacher trainees.

2. METHODS USED IN THE REVIEW

2.1 User involvement

2.1.1 Approach and rationale

We involved those who deliver ITE in the conduct of this review through the formation of an ITE user advisory group (for membership, see Appendix 1.1). This group was involved in shaping the review in the following ways: refining and clarifying our review questions and concerns; commenting on our review codes to ensure that the most relevant information is extracted from studies; commenting on the content and style of the review report; and preparing a user perspective interface for the review.

2.1.2 Methods used

The processes that allowed this to happen included sending the protocol to all members of the advisory group for their feedback, and a face-to-face meeting of the advisory group and the review team before the coding of studies began to discuss the protocol and their views on important issues. Users were involved via two face-to-face advisory group meetings. At the first meeting feedback was sought on the review protocol and our search and coding strategies. At the second meeting feedback was sought on the style and content of the draft report of the full review and on dissemination issues.

2.2 Identifying and describing studies

2.2.1 Defining relevant studies: inclusion and exclusion criteria

The following indicates the substantive and methodological boundaries of the review and hence the kinds of studies that were included.

Populations

The review was concerned with two specific populations: (i) children of primary school age, which is usually four- to 11-years old and (ii) primary school teachers or students in primary initial teacher training.

Interventions

The interventions of interest were of two types: (i) strategies to support pupils with emotional and behavioural difficulties in mainstream classrooms (e.g. circle time, behavioural strategies) and (ii) teacher training packages/courses in using such strategies. The strategies did not have to take place in the classroom, but they should have aimed to help pupils in the classroom on their return. The review was not concerned with the effectiveness of drug treatments. It was not concerned with strategies for general discipline problems, although the strategies for supporting pupils with EBD may have been applied to the whole class.

Educational phase/settings

The review was concerned with the primary phase of education and was therefore interested in interventions which take place in primary schools. The review was not concerned with strategies which took place in non-mainstream settings (e.g. special classes or resource rooms).

In relation to teacher training packages/courses, the review included studies taking place in mainstream primary schools (e.g. as might be expected in school-based initial teacher training) as well as those in higher education settings (e.g. primary PGCE courses / continuing professional development courses). The focus of these teacher training packages had to be about strategies to be used within mainstream primary schooling.

Study types

The review sought to identify studies which evaluate interventions aiming to detect changes in outcomes as a result of particular interventions (e.g. classroom strategies for behaviour management; training packages for teachers). These studies usually collect 'quantitative' data (e.g. teacher ratings of disruptive behaviour) which can be used to calculate the size of any effect of the intervention. These studies may also collect 'quantitative' or 'qualitative' data to examine factors related to the implementation of an intervention or the acceptability of an intervention to providers and recipients. Such knowledge may be especially useful to teacher or teacher trainers for understanding how an intervention can be implemented to achieve maximum benefit and how other contextual factors may mediate any effects (e.g. type of school, type of behaviour).

The review did not consider other study types such as descriptive studies (e.g. surveys of teachers' views, unless in the context of an outcome evaluation), reviews of the field or theoretical studies. These did, however, inform the background and context of the review. Future reviews could consider including these types of studies. Comparing what is known from different study types may raise interesting issues for policy, practice and research.

Outcomes

The review was concerned with the effect of strategies on pupil behaviour, social skills, academic performance or self-esteem. If reported, it was also concerned with the effect of strategies or teacher training for using strategies on teacher outcomes such as stress, classroom management skills or confidence.

Year of publication

As this review aimed to develop a previous review, we only sought studies published since the completion of the previous review.

The scope of the review was translated into a set of operational exclusion codes which are described in Appendix 2.1.

2.2.2 Identification of potential studies: search strategy

The following sources of research were used to identify relevant studies:

(i) Bibliographic databases

Five databases were searched:

- Applied Social Sciences Index and Abstracts (ASSIA)
- British Education Index
- ERIC
- PsycINFO
- The Social, Psychological, Educational and Criminological Trials Register (SPECTR) held by the Campbell Collaboration at the University of Pennsylvania

The search strategy combined terms for 'the problem' with terms for the 'phase of education' (i.e. primary education). Preliminary search development suggested that any further restrictions on the searching, for example to study type, outcomes or intervention, would miss too many relevant studies. Searches were restricted, however, by excluding studies focusing on drug treatments for EBD.

The searches on each database were constructed according to the following concepts (with the concepts translated into each databases controlled vocabulary and/or 'free-text' terms):

- #1 General terms for emotional and behavioural difficulties (e.g. behaviour problems; behaviour disorders; emotional problems)
- #2 Specific named emotional and behavioural difficulties (e.g. hyperactivity)
- #3 Named strategies for supporting pupils with emotional and behavioural difficulties (e.g. circle time; behaviour modification)
- #4 #1 or #2 or #3
- #5 Terms for primary education (e.g. primary schools, elementary education)
- #6 #4 AND #5

These searches were run from 1999 to February 2003.

The full search strategies appear in Appendix 2.2.

Citations were downloaded into reference management software to create a working review management database. Each citation was coded according to which search it was identified by and on which database. As some citations were identified by more than one database, duplicates were identified and removed, although the citation retained was coded according to the two or more databases it was found on.

(ii) Handsearching

A total of 20 journals were handsearched (from 1999 to the current issue available). Due to time constraints, we restricted our choice of journals to those available in the library of our host institution. Appendix 2.3 lists these journals and the volumes and issues that were searched.

(iii) Scanning reference lists

The reference lists of reviews identified by our search strategies were scanned to identify further potentially relevant citations.

Studies identified via sources (ii) and (iii) were added to the review management database described under (i) and coded accordingly.

We did not contact experts in the field due to time constraints.

2.2.3 Screening studies: applying inclusion and exclusion criteria

All studies identified were screened according to the criteria set out above in section 2.2.1.

2.2.4 Characterising included studies

The EPPI-Centre core keywording strategy for educational research (EPPI-Centre, 2002a) was used to code studies according to the country in which the study was carried out; the population studied; the age and sex of learners; and the type of study.

These codes were supplemented with review-specific codes. These covered the theoretical model underpinning the strategy evaluated; the type of behaviour/outcome the evaluated strategy is trying to change; the people involved in implementing the strategy (e.g. regular classroom teacher, peer, researcher); whether the study examined or raised issues relevant to teacher training; the evaluation design employed in the study; and the sample size (e.g. single participant; less than 10; greater than 20 but less than 50). A full description of the coding appears in Appendix 2.4. However, we describe in more detail here the codings we used for theoretical model underpinning the evaluated strategy; the type of behaviour the evaluated strategy tried to target; and the evaluation design employed.

Four codes were applied to classify the theoretical model underpinning the strategy under investigation. The four categories and their definitions are outlined below:

- Strategies underpinned by a **behavioural model** rest on the principles of learning theory, specifically the assumption that learned, 'unwanted' behaviours can be modified or extinguished, in the short term, through programmes of selective reinforcement. This approach takes little account of individuality and could be described as an 'input-output' model. For example, one study used a time-out procedure to reduce inappropriate verbalizations.
- Strategies based on **cognitive-behavioural** model reflect the 'cognitive shift' away from a strictly behaviourist model of the person. They recognize children's ability to form mental representations, including representations of social behaviour and to reflect upon their own behaviour. This model rests on the assumption that 'faulty' thought patterns can be modified, with a long-term impact on behaviour. For example, studies have included elements of self-instruction or self-monitoring within the context of a behaviour management programme. Studies based on social learning theory are also included in this category.
- Strategies based on a **systemic (or ecological) model** rest on the assumption that socio-structural factors are more influential than individual

factors in determining behaviour. They emphasize the importance of understanding the situational context in which any particular behaviour occurs. In effect, behaviour is produced and given meaning as a result of the interaction between the individual and the system. For example, disruptive behaviour in the classroom might be 'caused' by the classroom layout.

- Strategies based on **psychotherapeutic** principles emphasize the deep and complex roots of behaviour problems, and the possibility of long-term change through personal development, with an emphasis on building relationships. For example, 'nurture groups' in schools. Our classification encompasses psychoanalytic, humanistic and person-centred perspectives.

We used the following operational definitions to help us to classify studies according to one or more of four types of behaviour that the evaluated strategy targeted:

- **off-task behaviour**, characterised by not engaging in the work set by the teacher, fiddling with pencils and other equipment, wandering round the classroom, etc.;
- **disruptive behaviour**, characterised by calling out in class, interfering with others' possessions, talking to others and disturbing their work;
- **aggressive behaviour**, such as arguing, fighting, name-calling, etc.;
- **social difficulties behaviour**, such as inappropriate attempts to engage with peers, refusal to engage with peers or adults.

Our review-specific characterisation of the evaluation design employed in the studies is outlined below. (This classification system was used in our previous review.)

- **Randomised controlled trial (RCT)**
To be classified as an RCT, the evaluation must:
 - (a) compare **two or more** groups which receive different interventions or different intensities/levels of an intervention with each other; and/or with a group which does not receive any intervention at all **AND**
 - (b) allocate participants (or classes, or schools, or LEAs, etc.) to the different groups in a **fully random manner** (e.g. a random numbers table is used).
- **Trial**
To be classified as a trial, the evaluation must compare two or more groups which receive different interventions, or different intensities/levels of an intervention to each other; and/or with a group which does not receive any intervention at all, **BUT DOES NOT** allocate participants (or classes, or schools, or LEAs etc.) in a fully random manner.
- **Reversal design**
The key component of this design is the reversal phase after the intervention (when the subject is observed again without intervention), in which, for the subject to act successfully as its own control, the outcome measures must not differ from baseline. It is also described as 'ABA' in which A denotes no intervention and B denotes the period when the intervention takes place. More complex variations on this design are also found (e.g. ABACA), in which different interventions are described as 'B' and 'C'.

- **Pre- and post-test only**
To be classified as pre- and post-test, the evaluation must:
 - (i) use one group only AND
 - (ii) measure outcome variables on one or more occasions before the intervention is implemented AND
 - (iii) measure outcome variables on one or more occasions after the intervention is implemented.
- **Post-test only**
To be classified as a post-test evaluation, the study must use one group only and measure outcomes at one or more time points after the intervention only.
- **Other design**
This classification was only used if the study did not fit into one of the above categories.

The generic and review-specific codes were used to produce a descriptive map of all studies meeting our inclusion criteria. Codes were entered on to, and analysed, using EPPI-Reviewer, the EPPI-Centre's specialist reviewing software.

2.2.5 Identifying and describing studies: quality assurance process

A sample of citations to screen for inclusion and a sample of papers for keywording were submitted to the EPPI-Centre TTA reviews management team. This was done in the early stages of the screening and keywording process. The results of their screening and keywording were compared with those of the review team and any discrepancies resolved through discussion.

The review team also instituted their own quality assurance processes. This consisted of the same stages for both the application of inclusion / exclusion criteria as well as keywording. Firstly, the members of the team who were undertaking these tasks would meet to discuss the meaning and application of the relevant tool (inclusion / exclusion criteria and keywording). They then applied the tool to a small number of studies and discussed the results. After this, the work continued with difficult cases being referred to other members of the team for additional consultation. In order to make most efficient use of the resources for retrieving articles, all references which were marked for retrieval were checked by at least two members of the team.

2.3 In-depth review

2.3.1 Moving from broad characterisation (mapping) to in-depth review

Since our review identified a large number of studies, it was not possible to review all of them in depth, so a narrower set of inclusion criteria were developed to select a subset of studies for in-depth review. These criteria were agreed in consultation with our ITE advisory group. Advice from this group indicated that the national and local context in which teachers are working is a crucial factor in assessing the suitability of any strategy for use in schools.

To be included in the in-depth review, studies had to:

- be conducted in the UK;
- employ a control or comparison group within its evaluation design or employ a reversal design;
- employ a sample size of greater than 20.

The latter two criteria were employed to ensure that we prioritised those studies which had the potential to provide trustworthy findings about the effectiveness of strategies. Employment of adequate controls in an evaluation guards against any improvements in outcomes due to, for example, the passage of time, being mistaken for the effects of an intervention. An adequate sample size is also important to enable tests of statistical significance to be employed in a meaningful way. Very small samples may lead to a failure to detect a significant difference in outcomes between groups even if one exists. We set an arbitrary sample size limit of 20 or more.

We had another 'reserve' criteria if the above resulted in too many studies for us to review in-depth within our timescale: only to include studies which had evaluated strategies based on psychotherapeutic or systemic models.

All procedures in the in-depth review were carried out by two members of the review team independently.

2.3.2 Detailed description of studies in the in-depth review

The EPPI-Centre standardised set of data-extraction guidelines were applied to the outcome evaluations meeting the criteria for in-depth review (EPPI-Centre, 2002b). These guidelines enabled reviewers to extract data on the development and content of the strategies evaluated; the design and findings of the outcome evaluation, including recruitment and characteristics of the sample; and details of any integral process evaluation (e.g. on factors influencing the implementation of the intervention, the acceptability of the intervention to teachers and pupils).

2.3.3 Assessing quality of studies and weight of evidence for the review question

We used EPPI-Centre methods for assessing studies for their quality, applicability and relevance for answering the review question. They build on work on the evaluation of social and educational interventions more generally (e.g. Loevinsohn, 1990; MacDonald *et al.*, 1992; Oakley and Fullerton, 1996). This is a four-stage process which determines the weight which should be accorded to each study in the review.

The first stage (A) assesses the study in its own right (without reference to the review), asking: *taking account of all quality assessment issues, can the study findings be trusted in answering the study question(s)?*

The second stage (B) of this process examines the *appropriateness of research design and analysis for addressing the question, or sub-questions, of this specific systematic review*. This stage is not concerned with the quality of the individual study or its topic focus. Since our review was looking for effective strategies, the designs and analyses of the studies which it included had to be robust enough to demonstrate that a particular intervention had had an effect.

In making judgements for A and B, we were particularly concerned with the extent to which studies had avoided or reduced the following sources of bias or threats to internal validity: maturation or history (is it possible that any differences in outcomes can be attributed to the passage of time rather than the intervention under evaluation?); selection bias (is it possible that any differences in outcomes can be attributed to pre-existing differences between intervention and comparison groups rather than the intervention?); bias due to loss to follow-up (is it possible that any differences in outcomes can be attributed to large numbers of participants dropping out of the study/ differential drop-out from intervention and any comparison group?); and selective reporting bias (is it possible authors have only reported on the one outcome for which there was a significant difference out of numerous outcomes actually measured?). A reduction in these types of biases are to be expected in research which is aiming to address whether changes in outcomes can be attributed to the intervention being evaluated.

The third stage (C) examines the *relevance of the particular focus of the study (including conceptual focus, context, sample and measures) for addressing the question or sub-questions of this specific systematic review*. Again, this question has a review-specific focus. Leaving aside issues of study quality, this question aims to identify those studies which have a direct relevance to answering the review question(s) and those which are helpful, but perhaps have a slightly different focus or approach the subject in a tangential way.

The fourth and final stage (D) brings the first three stages together in a question which asks, *taking into account quality of execution, appropriateness of design and relevance of focus, what is the overall weight of evidence this study provides to answer the question of this specific systematic review?* In making this overall judgement we looked at the spread of ratings given across stages A, B and C and tried to allocate an average. For example if A was high, B was medium and C was low, we gave a study an overall rating of medium. However, we did attach more emphasis to weights given for stages A and B. Conclusions and recommendations for policy and practice are only drawn from studies which score highly here. Studies which were highly rated in stage C, but possibly had problems in their design or implementation, are used to make recommendations for further research.

2.3.4 Synthesis of evidence

Narrative synthesis was used to describe and explore effects according to variations in strategy types, outcomes measured and characteristics of the children/ teachers studied.

2.3.5 In-depth review: quality assurance process

Two reviewers extracted data from each study in the in-depth review independently. This represented the quality assurance process within the review team for this stage of the review. Reviewers compared their data-extraction and any discrepancies were resolved through discussion.

Two studies were submitted to the EPPI-Centre TTA reviews management team. The results of their data-extraction and quality assessment were compared with those of the review team and any discrepancies resolved through discussion.

3. IDENTIFICATION AND DESCRIPTION OF STUDIES

3.1 Results of the searching and screening process

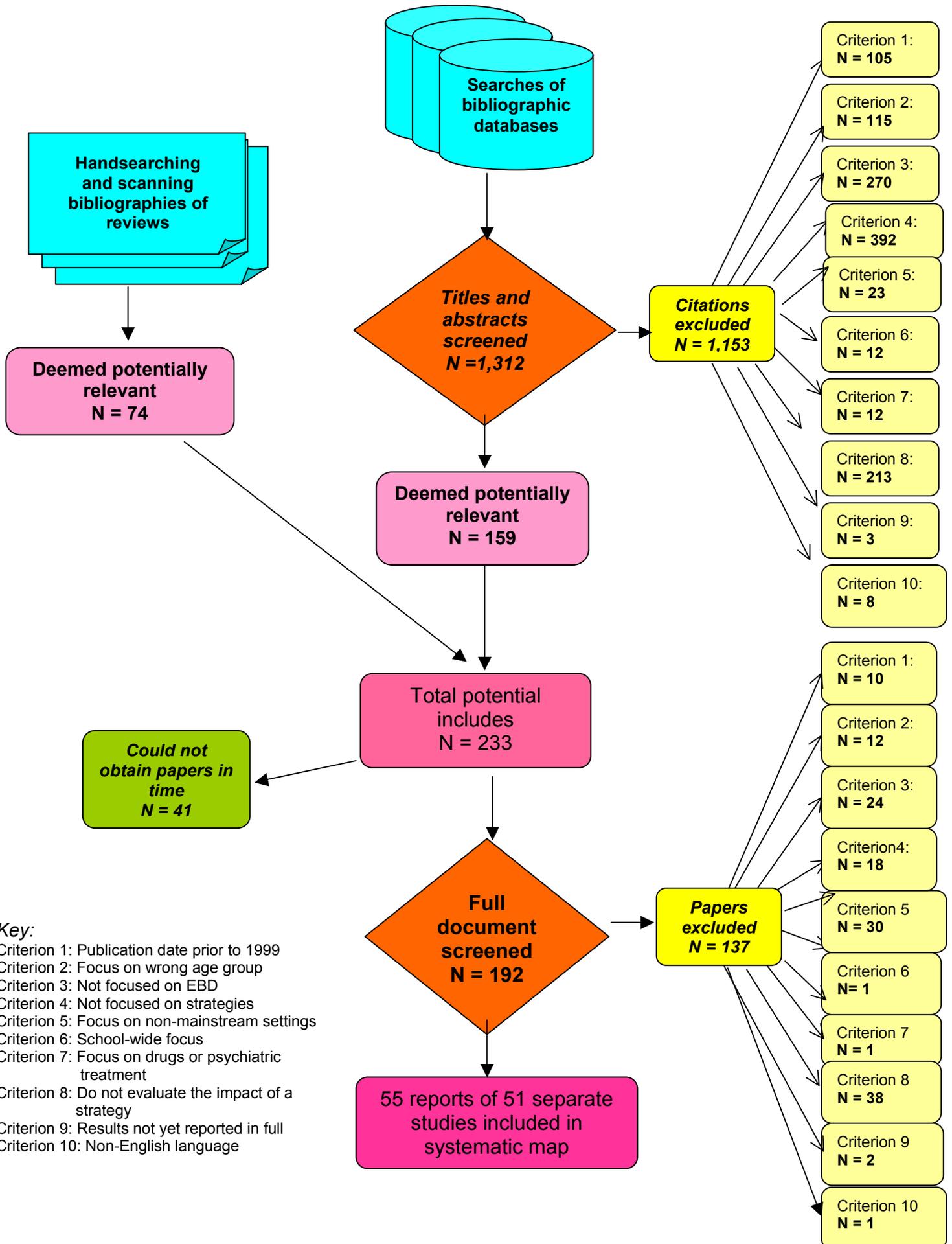
After removing duplicates, the five electronic bibliographic databases we searched yielded a total of 1,312 citations. Most of the references were found on ERIC with some duplication between the various databases searched. However, the high number (1,260) of unique references found on each database demonstrates the value of searching multiple sources.

Bibliographic database searches were supplemented with handsearching journals and scanning the bibliographies of other reviews. Figure 3.1 shows the flow of citations, reports and studies through the main stages of the searching and screening process.

All 1,312 citations identified on electronic bibliographic databases were screened for inclusion in the review according to the criteria specified in Chapter 2. The majority of these citations were excluded (n=1,153). The most common reasons for exclusion were an out-of-range publication date (criterion 1, n=105); a focus on the wrong age group (criterion 2, n=115); no focus on children with EBD (criterion 3, n=270) or strategies to support children with EBD (criterion 4, n=392); and no attempt to evaluate the impact of strategies for supporting pupils with EBD (criterion 8, n=213). A total of 159 were deemed to be potentially relevant. Of these, 145 citations could not be excluded on the information available in their title and abstract (where available) and were marked for possible inclusion in the review. In addition, a further 14 were considered to merit further examination due to the references or theoretical perspectives they might contain.

Handsearching and scanning the bibliographies of reviews found an additional 74 potentially relevant citations. In total, 233 citations were listed for obtaining the full report. Full reports were obtained for 192 of the 233 citations (82%). After the reports had been read, 137 of these were excluded. The most common reasons for exclusion at this stage were the same as those described above. A total of 55 reports were judged to meet the inclusion criteria (i.e. contained the results of primary evaluative research on the impact of strategies to support pupils with EBD in mainstream classrooms) and were included in the map. Although we identified 55 reports, there were four pairs of reports which each described the same study. The 55 reports therefore described a total of 51 separate studies.

Figure 3.1 Flow of literature through the searching and screening process



The relative yields of the different aspects of our search strategy are shown in Table 3.1. The number found through reference lists and handsearching represents the number of reports found uniquely by these sources (i.e. not also found on bibliographic databases). Handsearching and scanning reference lists were clearly worth undertaking as they identified a significant number of additional relevant reports not identified through bibliographic databases.

Table 3.1: Number and percentage of reports (N=55) found within different search sources

Source	N
Bibliographic databases	47
Reference lists	2
Handsearching	6
Total (mutually exclusive)	55

Although the majority of the 51 studies were described in published reports appearing in journals or books (n= 41, 80%), 10 studies were described in unpublished reports (e.g. end of project reports). It is worth noting that ERIC is becoming a useful source for unpublished as well as published material, making a large number of conference proceedings and other unpublished work available online for a small charge. Indeed, the internet proved a very useful source for obtaining full reports for potentially relevant citations both from free online journals and from periodicals to which our host institution pays a subscription. It would otherwise have been impossible to retrieve the full reports of such a high proportion (82%) of the 233 potentially relevant citations we identified.

The excluded reports were not simply discarded. For example, those that dropped out on exclusion criterion 8 because they did not evaluate the impact of strategies, were used to inform the background and discussion for this review if they reviewed previous research or discussed conceptual or theoretical issues. Those that dropped out on other criteria have been classified and stored for use in future reviews.

3.2 Characteristics of the included studies

This section describes the characteristics of the 51 included studies in more detail according to the country in which they were carried out; the types of behaviour and children they targeted; and the types of strategies implemented (e.g. theoretical underpinnings; persons involved in strategy implementation).

3.2.1 Country in which interventions were implemented

Most of the studies evaluated interventions implemented in the US (68%) and nine were from the UK (Table 3.2). None of the studies were conducted in more than one country.

Our user advisory group highlighted that context is a particularly important

issue for the topic of this review. Trainee teachers and providers of initial teacher education in the UK need to consider to what extent strategies evaluated in different countries will be applicable to their own context. For this reason we have broken down all subsequent description of our studies according to country. These have been grouped into UK studies, studies carried out in the USA, and those carried out in the other countries.

Table 3.2: Number and proportion of outcome evaluations (N=51) according to country in which interventions were implemented

Country	N
USA	35
UK	9
Canada	2
Israel	1
Australia	1
Korea	1
New Zealand	1
Unspecified	1
Total (mutually exclusive)	51

3.2.2 Types of emotional and behavioural difficulties targeted by the evaluated strategies

As discussed earlier in this report, the concept of emotional and behavioural difficulties is complex and not easily defined. The studies included in this report usually provided an operational definition in terms of the types of behaviour on which they were focused. Broadly speaking these were as follows:

- **off-task behaviour**, characterised by not engaging in the work set by the teacher, fiddling with pencils and other equipment, wandering round the classroom, etc;
- **disruptive behaviour**, characterised by calling out in class, interfering with others' possessions, talking to others and disturbing their work;
- **aggressive behaviour**, such as arguing, fighting, name-calling, etc;
- **social difficulties**, such as inappropriate attempts to engage with peers, refusal to engage with peers or adults.

These behaviours were often seen in combination, and some strategies had several components each addressing different aspects of problematic behaviour. Table 3.3 shows the four main types of emotional and behavioural difficulties targeted by the strategies evaluated in our 51 studies. Thirty-three of the 51 studies evaluated strategies targeting two or more types of behaviour and the overall denominator of Table 3.3 is 109 rather than 51. (The denominator for UK studies is 24 rather than nine; for US studies it is 77 rather than 35; and for other countries it is eight rather than seven.) In some studies, it was difficult for reviewers to classify the types of behaviour targeted due to lack of detail in

individual study reports. For example, some study authors simply described behaviours in generic terms, such as ‘problem behaviour’. In these cases, reviewers used the code ‘unclear’. The *overall* column shows that there is no one major category of targeted behaviour which has been evaluated more than others over the past three years. However, context is clearly very important. There appears to be a difference in emphasis regarding the type of behaviour targeted between the US and other countries; strategies evaluated in the UK and other countries target proportionately more of their strategies at social difficulties than the US. This difference of approach is reflected in the theoretical models underlying the strategies too (see Table 3.4).

Table 3.3: Number of studies (N=51) according to the type of behaviour targeted by the evaluated strategy

Behaviour	UK	USA	Other	Total
Aggressive	4	18	5	27
Disruptive	5	21	2	28
Off-task	5	21	0	26
Social difficulties	7	11	0	18
Unclear	3	6	1	10
Total (not mutually exclusive)	24	77	8	109

3.2.3 Theoretical models underpinning evaluated strategies

As discussed in Chapter 1, strategies for supporting children with EBD are based explicitly or implicitly on underlying *theoretical* assumptions about the causes of EBD. These have implications for the type of strategy which is implemented. We attempted to place each strategy evaluated by the studies into one of four categories, using information provided by the authors where possible: **behavioural, cognitive-behavioural, systemic and psychotherapeutic**. When authors were not explicit about their use of theoretical models, reviewers made a judgement.

The number of studies evaluating strategies based on these different models is shown in Table 3.4. This list of theoretical perspectives is by no means exhaustive (10 studies evaluated strategies underpinned by theoretical models reviewers classified as ‘other’) and there is considerable potential for overlap between them. Some studies did draw upon more than one model, especially when describing a complex package of interventions. Eleven studies evaluated strategies underpinned by two or more theoretical models and the overall denominator of Table 3.4 is 63 rather than 51. (The denominator for UK studies is 11 rather than nine; for USA studies it is 44 rather than 35; and for other countries it is eight rather than seven). Nevertheless, we believe that the above classification fairly and usefully represents the principal strands of theory underpinning the strategies evaluated by research studies covered in this review.

Table 3.4: Number of studies (N=51) according to the theoretical model underpinning the strategy

Theoretical model	UK	USA	Other	Overall
Cognitive behavioural	3	17	5	25
Behavioural	0	13	2	15
Systemic	1	5	0	6
Psychotherapeutic	7	1	0	8
Other	0	8	1	9
Total (not mutually exclusive)	11	44	8	63

As the above table shows, cognitive behavioural and behavioural are the most common theoretical models underpinning the strategies evaluated by the studies included in this review. In addition, we identified eight evaluations of strategies based on a psychotherapeutic model; our earlier review did not find any studies which had evaluated strategies in this category. Whilst the UK is similar to the US in that it has evaluated some strategies based on a cognitive behavioural model, the difference is stark for other models. This review has identified no studies which have evaluated strategies based on a behavioural model in the UK (compared with 13 in the US) and seven studies evaluating strategies based on psychotherapeutic principles (compared with only one in the US).

3.2.4 Personnel involved in implementing evaluated strategies

Although the majority of studies evaluated strategies which involved teachers in their implementation, a variety of other personnel were also involved (Table 3.5). Many studies evaluated strategies implemented by more than one type of person so the overall denominator of Table 3.5 is 106 rather than 51. (The denominator for UK studies is 14 rather than nine; for USA studies it is 79 rather than 35; and for other countries it is 13 rather than seven.)

In 12 studies, teachers alone were responsible for implementing the strategy, though in another 10 studies teachers were not involved in implementing the strategy at all (data not shown in table). Other school staff (such as special education teachers, psychologists or researchers) usually supported teachers. In one study, specially designated 'behaviour support staff' worked alongside teachers and a range of other personnel, including a psychologist, a counsellor and a home liaison agent (Schmid, 1999).

Peers helped to implement strategies in seven studies. This usually involved some form of peer-monitoring or peer-tutoring. Gumpel and Frank (1999), for example, looked at the effects of a cross-age peer-tutoring programme on the social skills of two socially rejected and isolated kindergarten boys. In this instance, peer-tutoring consisted of the older boys conducting social-skills training with their younger tutees. The benefits of this strategy were assessed for *all* those involved in the strategy, both tutors and those being tutored.

Table 3.5 Number of studies (N=51) according to the personnel involved in implementing the strategy

Personnel	UK	USA	Other	Overall
Teaching staff	6	31	4	41
Classroom assistant	1	1	0	2
Non-teaching school staff	0	1	0	1
School senior management	0	1	0	1
Behaviour support staff	0	1	0	1
Special education teacher	0	5	0	5
Special Educational Needs Co-ordinator	1	0	0	1
Psychologist	0	5	2	7
Researcher	0	6	1	7
Peer	1	4	2	7
Parents	1	11	1	13
Social worker	0	1	1	2
Other	3	12	2	17
Not stated	1	0	0	1
Total (not mutually exclusive)	14	79	13	106

Parents were involved in implementing strategies in 13 of the studies, in all cases this was in collaboration with others, particularly teachers (11 out of 13 studies). There were varying levels of parental involvement. In one study, the strategy involved the parent, teacher and therapist meeting up before and during the strategy implementation to identify the child's needs and draw up an action plan (Bock, 1999). In other instances the role of the parent involved monitoring and/or rewarding the child. Epstein *et al.* (2001), for example, report on a study which involved parents' keying in reminder prompts into a computer which were sent to the child throughout the day, monitoring whether the child followed through with prompts and establishing goals and rewards based upon the percentage of successfully completed prompts.

In 17 studies, 'other' personnel or family members, including therapists, parent liaison and home-school co-ordinators, counsellors, mentors, tutors and grandparents, implemented the strategies. In one instance, a computer and a pager were used to deliver prompts to the child throughout the school day. Our map only identified four studies which specifically evaluated support for teachers in implementing strategies (College of Family and Consumer Sciences, 1999; De Martini-Scully *et al.*, 2000; Doyle, 2001; Shapiro *et al.*, 1999).

3.2.5 Characteristics of children targeted for intervention

All but three study authors reported details of the ages of the children in their samples. Appendix 3.1 gives these details when reported for each of our 51 included studies. Authors for eight studies gave mean ages, whilst the majority (n=40) reported age ranges. The majority of studies evaluated strategies for both girls and boys (Table 3.6). When strategies targeted a single sex, it was more likely to be boys (12 studies evaluated strategies targeting boys only compared with one study targeting girls overall). Studies conducted in countries outside the UK were more likely to evaluate strategies targeted at a single sex. Even when strategies targeted both sexes, boys were more likely to make up the majority of the total number of children targeted.

Table 3.6: Number of studies (N=51) according to the sex of the children supported by the evaluated strategies

Sex of children	UK	USA	Other	Overall
Both male and female	9	26	4	39
Male only	0	8	3	11
Female only	0	1	0	1
Total (mutually exclusive)	9	35	7	51

3.2.6 Methodological characteristics of the studies

Table 3.7 shows the types of evaluation used to assess the effectiveness of the classroom strategies. Approximately half of the nine evaluations conducted in the UK were categorised as being 'naturally occurring' whilst only 13 out of the 51 studies overall used this design.

Table 3.7: Type of evaluation used in the studies (N=51)

Type of evaluation	UK	USA	Other	Overall
Evaluation: Naturally occurring	5	8	0	13
Evaluation: Researcher-manipulated	4	27	7	38
Total (mutually exclusive)	9	35	7	51

In addition to the above categorisation, we used some review-specific descriptors with which to classify the types of study in this review (see section 2.2.4 for definitions of these codes). The results of the review-specific study type classification are shown in Table 3.8.

Table 3.8: Number of studies (N=51) according to study design

Design of evaluation	UK	USA	Other	Overall
Randomised controlled trial (RCT)	2	9	3	14
Trial	3	3	0	6
Reversal design	0	5	3	8
Pre- and post-test only	1	6	1	8
Post-test only	3	6	0	9
Other design	0	6	0	6
Total (mutually exclusive)	9	35	7	51

Over one-third of studies (n=20) used an evaluation design which employed one or more comparison groups (combining the totals for randomised controlled trial and trial). This is an important design for producing reliable estimates of intervention effects. Previous research has demonstrated that it is important to be able to compare the people who received the intervention with a similar group who did not in order to rule out any observed effects being due to the passage of time or other events. Similar proportions of studies in both the UK and US employed a randomised controlled trial.

The size of studies is also important. If the studies are too small, they are likely to lack the statistical power necessary to detect any effects of the intervention. Just over half of all studies used sample sizes of greater than 20 (Table 3.9).

Table 3.9: Distribution of sample sizes in the 51 studies

Sample size	UK	USA	Other	Overall
1	0	6	1	7
2 – 10	3	8	3	14
11 – 20	0	2	0	2
> 20	6	19	3	28
Total (mutually exclusive)	9	35	7	51

As might be expected, randomised controlled trials and other trials tend to have larger sample sizes than other designs (Table 3.10). The eight studies using reversal designs never employed a sample size greater than 10.

Table 3.10: Cross-tabulating sample size by study design (N=51 studies)

	N = 1	2 – 10	11 – 20	> 20	Total
Randomised controlled trial (RCT)	0	0	0	14	14
Trial	0	0	0	6	6
Reversal design	2	6	0	0	8

	N = 1	2 – 10	11 – 20	> 20	Total
Pre- and post-test only	1	2	0	5	8
Post-test only	1	4	1	3	9
Other design	3	2	1	0	6
Total (mutually exclusive)	7	14	2	28	51

Both qualitative and quantitative data were collected to evaluate strategies (Table 3.11). When used in combination, qualitative data were often collected to describe the views of key stakeholders (e.g. parents, teachers, children) on the appropriateness of strategies. Quantitative data were used to provide estimates of the impact of the strategies on outcomes for children or teachers. Using both types of data in combination is a powerful way to tease out why a strategy might be working or not. However, in some of the studies included in the in-depth review described in Chapter 4, qualitative and quantitative data were both used to examine the impact of strategies. As will be described in this chapter, this raised interesting differences: qualitative data tended to reveal positive effects whilst quantitative data revealed a somewhat different picture.

Table 3.11: Type of data collected in studies evaluating strategies (N=51)

Type of data	UK	USA	Other	Overall
Quantitative only	2	26	7	35
Qualitative only	2	1	0	3
Qualitative and quantitative	5	8	0	13
Total (mutually exclusive)	9	35	7	51

It is often assumed that some types of evaluation design are purely 'quantitative' in nature, in particular trials. Thirteen studies collected both qualitative and quantitative data. These are examined in more detail in Table 3.12.

Table 3.12: Number of studies which collected both qualitative and quantitative data (N=13) according to study design and country

Design of evaluation	UK	USA	Other	Overall
Randomised controlled trial (RCT)	2	2	0	4
Trials	3	0	0	3
Reversal design	0	1	0	1
Pre- and post-test only	0	3	0	3
Post-test only	0	1	0	1
Other design	0	1	0	1
Total (mutually exclusive)	5	8	0	13

Seven of these studies employed control groups (RCTs and trials), three were pre- and post-test only and the number of RCTs and trials collecting qualitative as well as quantitative data was similar to proportions for other types of design. The international perspective is also worthy of note. All five studies conducted in the UK using the design of an RCT or trial collected both qualitative and quantitative data compared with only two of the 12 studies conducted in the US using this design.

Another common assumption is that studies employing a control or comparison group cannot be used to evaluate particular types of interventions. It is assumed that they are most suitable for evaluating relatively simple interventions, such as strategies based on behavioural models. Again our data undermine this assumption (Table 3.13). RCTs and trials have been used to evaluate strategies based on all four theoretical models. Not surprisingly, reversal designs have not been used to evaluate strategies based on psychotherapeutic models or systemic models. The design assumes that, when a strategy is withdrawn, behaviour will return to usual levels. Thus the appropriateness of this design depends on whether it is used to evaluate a strategy which is not expected to have any long-term effects. In six studies, a reversal design was used appropriately to evaluate strategies based on a behavioural model. However, in three studies, it was used less appropriately to evaluate strategies based on cognitive behavioural models which strive for longer-term changes.

Table 3.13: Cross-tabulating theoretical models against study design (N=51 studies)

	Behavioural	Cognitive behavioural	Psycho-therapeutic	Systemic	Other
Randomised controlled trial (RCT)	2	9	1	3	3
Trial	0	3	3	1	1
Reversal design	6	3	0	0	1
Pre- and post-test only	2	4	1	2	1
Post-test only	2	3	3	0	2
Other design	4	4	0	0	1
Total (not mutually exclusive)	16	26	8	6	9

3.3 Results of quality assurance

Quality assurance was carried out by members of the EPPI-Centre team managing this review in our application of inclusion / exclusion criteria and keywords.

Twenty citations were checked against our inclusion / exclusion criteria by the EPPI-Centre and a member of the review team. There was agreement on 19 out of the 20 citations and the difference on the twentieth was resolved after a very brief discussion.

Ten studies (18% of all studies) were double-keyworded by the EPPI-Centre. It was deemed appropriate to compare 20 of the 23 keywording codes across the 10 studies. (The three codes that were not compared were administrative rather than substantive codes.) This gave 200 points of comparison. Out of these, discrepancies were found in 48 cases (25%). Thirteen of these cases were in the application of the EPPI-Centre Core Keywording Strategy. Six of these reflected disagreements in coding the topic focus of reports; one was for specifying a programme name; one was for specifying the age of learners; two were for specifying the educational setting of the study; and three were for specifying the type of study. Apart from one of the three points of discrepancy arising from type of study, all these were a result of oversights by either the review team or the EPPI-Centre quality assurers. One of the three study type discrepancies reflected a more difficult issue in deciding whether the study in question was in fact a 'descriptive study' rather than an 'evaluation' (the code that the review team had applied). As there is a fine line between deciding whether something is a description or an evaluation, the review team decided to stick with their original coding (in consultation with the EPPI-Centre), but to highlight this study in the report. This study was Bock (1999) and it is described more fully in Appendix 3.1.

The remaining discrepancies (n=35) were in the application of our review-specific keywording. These occurred most frequently for coding the problem behaviour targeted by a strategy (n=9), its theoretical underpinnings (n=6), and the providers of the strategy (n=8). In most, but not all, of these cases these discrepancies may have reflected the use of implicit coding rules which the review team had developed, but failed to articulate to external quality assessors.

All discrepancies were resolved through discussion. The fact that there *were* discrepancies led us to double-check our keywording when we prepared Appendix 3.1. As coding is always a matter of judgement to some degree, differences between coders is inevitable. However, the quality assurance process has meant that we have been able to minimise any error associated with these differences in order to produce a rigorous description of the key features of the studies included in this review.

The team also instituted procedures to ensure internal quality assurance. After discussing the content and meaning of the keywording tool, the four reviewers (JE, JS, MS, JT) involved in this stage of the review keyworded six studies independently and then discussed the results. This process enabled us to come to a common understanding about the way in which categories should be applied as well as helped us to see how the keywords might be used to construct the map. We then broke into pairs and continued to keyword at least eight more papers and then met to discuss the results; we found that there were fewer areas of disagreement as we were applying the tool in a similar way. Throughout this stage of the review, members of the team would bring queries to the group in order to ensure that the keywords were applied consistently.

4. IN-DEPTH REVIEW: RESULTS

4.1 Identifying studies for the in-depth review

As described in Chapter 3, the screening of studies for inclusion in the review resulted in 51 studies for review. Due to time constraints, we planned to use a narrower set of inclusion criteria to identify studies to review in depth. These criteria were chosen in consultation with our ITE advisory group who advised us that studies evaluating strategies implemented in the UK should be a priority as the national and local context in which teachers are working is a crucial factor in assessing the suitability of any strategy for use in schools.

As described in Chapter 2, to be included in the in-depth review, studies had to:

- be conducted in the UK;
- employ a control or comparison group within its evaluation design or employ a reversal design;
- employ a sample size of 20 or greater.

Of the 51 studies, the majority (35) were carried out in the US and were excluded on this basis. Nine studies were carried out in the UK and the remainder in a range of countries, as described in Chapter 3.

Four of the nine UK studies were excluded from the in-depth review (Barnes, 2000; Bishop and Swain, 2000; Doyle, 2001; O'Conner and Colwell, 2002). All these were excluded on the second in-depth review criterion; that is, they did not employ a control or comparison group in their evaluation designs or a reversal design. However, it is worth noting that all of these studies also had small sample sizes. All four of the excluded studies evaluated 'nurture groups' or activities taking place within such groups.

This left us with five studies for the in-depth review. This number was manageable within our timeframe and we did not need to use our 'reserve' criterion which would have enabled us further to exclude studies if they did not evaluate strategies based on a systemic or psychotherapeutic model.

The titles and authors of the main reports describing the five studies chosen for in-depth review (along with brief details of the strategy evaluated, the size of the sample and evaluation design) were as follows:

- **A contradiction in terms? An evaluation of a single agency home-school support project**, Carol Lupton and Christine Sheppard (1999, 2000). This study evaluated a strategy based on a systemic model initially using a randomised controlled trial with a sample of 20 children.
- **Supporting primary and secondary pupils with communication and behaviour problems**, Rosemary Sage (2001). This study evaluated a strategy based on a cognitive-behavioural model using a randomised controlled trial with a sample of 36 children.

- **The contribution of a 'quiet place' to early intervention strategies for children with emotional and behavioural difficulties in mainstream schools**, Bob Spalding (2000). This study evaluated a strategy based on a psychotherapeutic model using a trial with a sample of 44 children.
- **Mentors for primary schoolchildren with behaviour problems: an evaluation of the CHANCE project**, Ian St James-Roberts and Clifford Samlal Singh (2001). This study evaluated a strategy based on both a cognitive-behavioural and a psychotherapeutic model using a trial with a sample of 66 children.
- **The effectiveness of 'nurture groups': preliminary research findings**, Paul Cooper, Roy Arnold and Eve Boyd (2001) Like Spalding (2000), this study also evaluated a strategy based on a psycho-therapeutic model using a trial with a sample of 342 children.

Another option for our in-depth review would have been only to include studies which evaluated the effects of interventions to provide support for primary school teachers in implementing strategies for pupils with EBD. Bearing the advice from our advisory group in mind we decided against this since, of the only four studies which would have met this criterion, all but one of these studies were conducted in the US. However, we have provided brief details of these studies in Appendix 4.1.

4.2 Comparing the studies selected for in-depth review with the total studies in the map

There were a number of differences between the studies selected for in-depth review and all of the studies included in the map. Many of these were due to the different foci of studies carried out in the UK, compared with those carried out in the US, where the majority of studies originated. Compared with the studies overall, a greater proportion of the studies included in the in-depth review evaluated studies based on a psychotherapeutic model of behaviour (three out of the five studies in the in-depth review compared with 13 of the 51 studies in the map) and each targeted a range of behaviours – aggressive, disruptive and social difficulties – rather than a single type of problem behaviour. This may indicate a tendency in the UK to view problem behaviour as a complex phenomenon, incorporating individual, social and systemic elements; it is not possible to tell whether this reflects the priorities of research funders or the primary concerns of researchers themselves.

Each of the interventions in this group was evaluated using some form of controlled study (RCT or trial), which compares with 39 percent of the total included studies. Each also collected additional qualitative data on participants' views of the interventions, compared with only 25 percent of all the studies included in the map.

4.3 Synthesis of evidence

4.3.1 Can strategies implemented in the UK be effective?

Overall summary

As described in Chapter 2, each of the five studies underwent a detailed data-extraction and quality assessment process. The main results of this process are detailed in Appendices 4.2 and 4.3. Table 4.1 at the end of this chapter provides an overview of our attempts to assess and synthesise the evidence base for the effectiveness of strategies implemented in the UK. This synthesis of findings is structured according to one of the main aspects of the conceptual framework for the review (theoretical model underpinning the strategy) and its methodological framework (weight of evidence).

The number of crosses in Table 4.1 highlights the fragmentary nature of the evidence base from the five UK studies conducted from 1999 to 2002. However, we should also acknowledge that this fragmentary nature may have been exaggerated due to limitations in our search strategy. We discuss this possibility in Chapter 5. There is no evidence on the effectiveness of strategies based on a behavioural model. For all other strategies, there was some evidence on effectiveness, but there were no studies judged to have provided a high weight of evidence for answering the review question.

Three studies had the potential to provide evidence on the effectiveness of strategies based on a psychotherapeutic model. For two of these studies, authors concluded that there were positive effects for children. Cooper *et al.* (2001) concluded that children attending 'nurture groups' showed improved levels of emotional and behavioural functioning, and Spalding (2000) concluded that children who had attended the 'quiet place' (a room which provided a therapeutic environment) showed improved levels of development. St James-Roberts and Singh (2001a, b) however, concluded that there were no differential effects on behaviour amongst children who received mentoring compared with those who did not. Mentors aimed to develop a trusting and supportive relationship with children. All these studies were judged by reviewers to have provided a medium weight of evidence for answering the review question. For each of these studies, reviewers judged results to be inconclusive due to small sample sizes in Spalding (2000) and St James-Roberts and Singh (2001a, b), and due to the interim nature of findings presented by Cooper *et al.* (2001).

Three studies had the potential to provide evidence on the effectiveness of strategies based on a cognitive-behavioural model. Lupton and Sheppard (1999, 2000) concluded that the strategy they evaluated which combined a strategy with systemic elements (parents, teachers and support staff working in collaboration) with cognitive behavioural elements whereby parents were trained to develop a range of skills, such as play, boundary setting, establishing rules and selective reinforcement, using naturally occurring situations within the home, was effective for improving the behaviour of children. Sage (2001, 2002) concluded that there were positive effects on the behaviour of children receiving a communication skills intervention. However, as described above, St James-Roberts and Singh (2001a, b) concluded that there were no differential effects on behaviour amongst children who received mentoring compared with those who did not. As well as

providing a secure and supportive relationship for children, mentors also attempted to provide children with solution focused cognitive-behavioural interventions.

Again, reviewers disagreed with author conclusions about the effects of these strategies. The study by Lupton and Sheppard (1999, 2000) was judged by reviewers to have provided a low weight of evidence and hence they judged the strategy to be unclear in its effects. This study was initially set up as a randomised controlled trial but this design collapsed during the course of the study and assessment of effects was provided by anecdotal accounts of the parents and teachers of children receiving the intervention only. The study by Sage (2001, 2002) was also judged by reviewers as providing a low weight of evidence. Despite this study using a strong design (a randomised controlled trial), the way the study judged the effectiveness of the strategy on children's behaviour was via anecdotal accounts of improvements by teachers and parents of children in the intervention group. Despite the fact that St James-Roberts and Singh (2001a, b) was judged by reviewers to provide a medium weight of evidence, reviewers judged the results of the study to be inconclusive due to a small sample size.

Only one study had the potential to provide evidence on the effectiveness of strategies based on a systemic model. This study was judged to have provided a low weight of evidence for answering the review question (Lupton and Sheppard, 1999, 2000). This study has already been discussed above.

Detailed descriptions of each study and its findings

This section provides more detail on each of the five studies summarised above.

Cooper et al. (2001) evaluated the effects of 'nurture groups' to support positive emotional and social growth and cognitive development. Between 10 and 12 children made up the groups and attended for 4.5 days per week. The groups were staffed by a teacher and a learning support assistant. The longest period of time that any child had spent in a 'nurture group' was one year.

In order to evaluate the intervention, the progress of 216 children with social, emotional and behavioural difficulties (SEBD) attending 'nurture groups' was measured and compared with the progress of two comparison groups. The first comparison group consisted of 64 children in mainstream classrooms and matched with the 'nurture group' pupils for age, gender, educational attainment and level of SEBD. The second comparison group of 62 children also attended mainstream classrooms and were matched for age and gender but did not have emotional and behavioural difficulties. Levels of SEBD for all participants were assessed and monitored using the Goodman 'Strengths and Difficulties Questionnaire' (SDQ). Children attending the 'nurture groups' were also assessed using the Boxall Profile, which measures levels of emotional and behavioural functioning and highlights specific targets for intervention. Interviews were held with 79 teachers in order to assess the impact of the 'nurture groups' on the schools as a whole. Pupils' perceptions of the intervention were also assessed using a face-to-face 'informant-style' interview. In addition, semi-structured telephone interviews were held with 89 parents in order to assess the effects of the 'nurture groups' on children's behaviour, educational progress and enjoyment of school.

The data presented suggest that children with social, emotional and behavioural difficulties made progress while attending the 'nurture groups'. SDQ and Boxall Profile data showed consistent levels of improvement in the mean scores across all groups. At entry, 92 percent of children in 'nurture groups' were in the abnormal or borderline range on the SDQ, compared with 84 percent of matched mainstream pupils with SEBD. By the third term, this has changed to 63 percent for 'nurture group' pupils compared with 75 percent for pupils with SEBD. Data from the Boxall Profile scores also showed statistically significant improvements in mean scores on both the developmental and diagnostic strands between the beginning of term one and the end of term two. Data from teacher perceptions indicated that they judged that progress had been made in pupils' academic progress, though the authors did not at this point have any comparative data against which to judge these perceptions.

However, this is an interim report and the authors advise caution when interpreting the results of this study. The current evaluation relies on pre- and post-test figures (as presented above) rather than on the use of the comparisons across groups. At present, therefore, the reviewers conclude that the results of the study are inconclusive.

Lupton and Sheppard (2000) attempted to evaluate the operation and impact of Parents and Schools Behaviour Action for Children (PASBAC), a preventative intervention for primary schoolchildren at risk of behavioural difficulties. The PASBAC project was set up in response to the concerns of five UK primary school headteachers about an increase in disruptive behaviour in their schools. It took a multi-systemic approach to intervention, targeting the home, the school and the individual child, modelled on the American FAST track programme.

Initially, evaluation using a randomised controlled trial was attempted. Children were to be allocated randomly to one of two treatment groups or a control group. In one treatment group, parents of participating children were to receive a weekly home visit from a Parent Support Worker (PSW). The PSW's role was to effect behavioural change by working with parents to develop a range of skills, such as play, boundary setting, establishing rules, and selective reinforcement, using naturally occurring situations within the home. In the other treatment group, parents were invited to a weekly parenting skills group. Both groups of children were to receive three interventions: group-based social-skills training delivered by SENCOs; academic/behavioural support in schools via IEPs; and teacher-based classroom intervention, matching home-school targets.

The study ran into methodological problems due in part to inadequate understanding about the purpose and requirements of a controlled trial on the part of the schools. This resulted in the authors being unable to use quantitative measures to assess the impact of the intervention or to report any meaningful findings from this aspect of the evaluation.

The authors concluded that, although the intervention appeared to strengthen the home-school link and to have met with some success in terms of behaviour, it was less successful for those already experiencing considerable difficulties. The single most important factor inhibiting the success of the intervention was judged to be the lack of effective channels of communication between school, project staff and families.

The reviewers conclude that this study has attempted to evaluate a promising, potentially useful multi-systemic intervention for children with emotional and behavioural difficulties but that its results are unclear. The PASBAC project itself was beset by difficulties. The researchers' initial aim of conducting a 'pluralistic evaluation' was not successful; the findings of the evaluation, as reported, are interesting, but largely anecdotal and do not provide sufficiently detailed, solid evidence about the operation or impact of the project. Many questions remain for future research.

Sage (2001, 2002) evaluated the Communication Opportunity Group Scheme (COGS) which taught communication skills to improve literacy and behaviour. Children typically performed a short poem, gave a talk on something that interested them, and answered questions from the audience or produced a piece of personal reflective writing. Guided practice together with corrective and supportive feedback was given by teachers.

The underlying hypothesis of the study was that poor performance and behaviour in school is linked to problems with oral and written communication and that focusing on teaching communication skills would result in improvements, both in academic work and in behaviour. COGS was evaluated using three groups of twelve children: one group received an intensive version of the COGS programme, the second received a brief version, and a third group acted as a control.

The findings from the experiment were that pupils receiving COGS (both the intensive and less intensive groups) improved their scores significantly on the COG tests. There were also significant improvements on the National Foundation for Education Research (NFER) reading tests among the COGS groups compared to the controls. The authors also reported improvements in behaviour, although there were no numerical data presented to support this. There were a number of interviews carried out with parents of children who had received COGS. These parents reported that their children had gained in confidence since receiving COGS and wanted the intervention to continue. One third of the children were also interviewed by an independent assessor and reported that they enjoyed the communication activities and that these activities had helped them with their lessons. School reviews suggested improved confidence, motivation and output.

From these reports, it is not clear whether the claims for the impact of the COGS approach on behaviour are substantiated. The evidence presented is sketchy and anecdotal. It would be necessary to carry out further research, with a clearer focus on behaviour, to address this particular question. Therefore, the reviewers have judged the results of this intervention to be unclear.

Spalding (2000) reports the evaluation of the impact of a therapeutic intervention (the 'quiet place') on the behaviour and emotional development of children with EBD attending primary schools in a deprived area of Merseyside, England. The 'quiet place' itself is a room in the school to which pupils can go to receive various treatments (e.g. massages, aromatherapy) and other therapeutic interventions. It contains a range of soft furnishings, bean bags and 'mini-environments', and each room has its own 'theme'. The children are timetabled to attend for an agreed number of sessions per week and the period of attendance is usually six

weeks. Parents are also invited into the room and many take advantage of the therapies on offer.

The evaluation reported in this article was based on a comparison between 22 children attending the 'quiet place' and a control group of 22 children in two neighbouring schools who did not have access to this facility. Semi-structured interviews with 16 parents were carried out after the intervention either in school or on the telephone. These interviews covered themes such as the way the child was perceived prior to referral and the way he or she was perceived post-intervention. The teachers of all the children in the sample were interviewed using a semi-structured schedule, which also covered the perceptions of the child prior to referral and post-intervention, also taking into account any other factors.

The evaluation found that children attending the 'quiet place' scored higher on positive development measures compared with the control group. The mean difference between pre- and post-test on 'developmental strands' was 5.81 for the intervention group and 1.95 for the control group. The mean difference between pre- and post-test on diagnostic profile was -6.4 for the intervention group and -1.52 for the control (a negative shift on this scale indicates positive growth). However the difference between the two groups was not found to be statistically significant.

Parents' overall responses to the experiences of their children was positive. There were no negative or critical responses, but one parent did remark that she thought the 'quiet place' had not been successful for her child as the problems were largely due to her peer group. Teachers thought that 14 of the children had improved noticeably (seven considerably), although for seven children there was no change. Six of the teachers commented on the calming effect which the 'quiet place' had had on the whole school.

The research design was appropriate but not ideal for the evaluation; the sample size was quite small and this could explain why the results of the development measures were not found to be statistically significant. More detail could also have been provided in the report on sample selection and characteristics. For example, it is not clear why only 16 out of a possible 44 parents were interviewed. The reviewers have to conclude, based on the evidence contained in the report, that the study's quantitative analysis has not demonstrated conclusively that the children benefited from the intervention and that its findings are therefore inconclusive. However, bearing in mind the small sample and the consequent lack of statistical power, the direction of effect should also be noted as well as the overwhelmingly positive responses from parents and teachers.

St James-Roberts and Singh (2001a, b) evaluated Project CHANCE, a community-based mentoring scheme. Adult mentors aimed to develop a trusting and supportive relationship with their mentee and used 'solution-focused interventions' to change their child's problem behaviour. This involved teaching their child life skills to encourage independence, active learning and a sense of mastery.

Effects were assessed via participants' own perspectives of the impact of the scheme and through the measurement of standardised outcomes at baseline and follow-up. The views of the parents of 24 of the children who had completed the mentoring successfully and the children themselves were assessed through

interviews. All but one of the parents felt that the mentor had a good influence on their child. The majority of children (between 14 and 20) reported that their mentor had helped them to learn to control their temper; to be more considerate; to get on better with friends, parents and teachers; to say 'Sorry' when they had done something wrong; and to feel more confident about themselves. Only small numbers of children felt that the mentor had helped them to improve their school grades.

The improvements noted by the parents and children were not reflected in the standardised outcome measures. At follow-up (taken shortly after children had graduated from the scheme), children in both the mentored group and comparison group showed improvements overall. However, children in the mentored group did not improve significantly more than the children in the comparison group.

Reviewers noted that the methods were well reported in this paper and the use of a matched comparison group meant that authors were able to rule out alternative explanations of any observed effects of the intervention such as history, maturation and pre-existing differences between children. Of particular significance to this review, teachers' individual assessments of children did not reveal any greater improvements in the mentored children's behaviour compared with the comparison group. As the authors note, the follow-up period was immediate and improvements may not yet have been evident. Reviewers also noted the small sample size of this study which meant that the study did not have sufficient power to detect any effect even if one existed. Its results are therefore inconclusive.

4.3.2 Other insights from the studies

Implementation, acceptability and participants' views

As well as attempting to provide quantitative assessments of the effects of strategies, each of the five studies included data to assess the views of participants – parents, pupils and providers. This was collected by a variety of methods: face-to-face and telephone interviews, and questionnaires. This section describes the findings of these aspects of the studies.

Cooper *et al.* (2001) do not discuss any process issues concerned with the setting up and running of the 'nurture groups'. However, they report the views of teachers, parents and children on the ways in which the 'nurture groups' were perceived by those involved. Teachers were positive about the impact of 'nurture groups', not only on the pupils in the group, but also on the school as a whole, in terms of the development of more nurturing attitudes across the school and changes in the ways in which teachers viewed children with EBD. Parents were also reported to be generally positive about their child's involvement in the 'nurture groups', even those who had initially been resistant to the idea of such a placement for their child. The authors reported that the children were quite guarded in their responses to questions about their experiences, but that the main issues to emerge from interviews were that they were positive about the quality of the relationships they had with 'nurture group' staff, the opportunities provided in the group for free play, the calmness and predictability of the 'nurture

group' environment, and the engaging nature of particular activities offered in the 'nurture group', such as meal and snack times.

The evaluation of the home-school support project (PASBAC) by Lupton and Sheppard (1999, 2000) reports a number of findings about processes, but gives no specific details of how these data were collected, apart from a mention of interviews with parents and school staff. These interviews seemed to indicate that respondents felt that relationships between the home and the school had improved as a result of the intervention. The authors discuss a number of problems with the implementation of the intervention. Firstly, the time-limited nature of the funding meant that the teachers involved had not been sufficiently trained in the objectives and working methods of the intervention. Secondly, SENCOs had insufficient time to liaise between the teachers and the parent support workers. The parent support workers were not experienced in working with families and had also not been sufficiently trained for their role. Lack of awareness also led to inappropriate referrals of children for the intervention. Some of the children referred had problems that were too far advanced to benefit from a preventative project. Parental involvement, which was seen a crucial to the project's success, was also compromised, because such meetings were set up in a very formal and intimidating way, which led to some parents withdrawing co-operation.

The intervention evaluated by Sage (2001, 2002) reports interviews with 18 parents and one-third (i.e. 12) of the participating pupils about their involvement in the project. All parents reported that they were happy to have their child involved in the project and that the child had gained in confidence. The majority of the parents (12 out of 18) reported that their child was now more willing to attend school. Children reported liking the communication activities in the COGS sessions more than their normal lessons. Sage reports that weekly or intensive daily sessions were both shown to be equally effective, so that the mode of delivery would be a matter of school choice. Training is required, and a video and training sessions are available from the author.

The evaluation of a 'quiet place' (Spalding, 2000) included interviews with teachers and parents. They reported that children who experienced most gains were those whose emotional needs were most clearly linked to low self-esteem and anger management. Those for whom it was least successful were those whom teachers and parents felt needed a longer-term intervention, or where the root of the problem lay more with the peer group. Teachers' assessment of the impact of the intervention on the school as a whole suggested that it had only had an impact on a small number of children. Teachers also thought that it would be difficult for the school to run this intervention from its own usual resources.

Project CHANCE (St James-Roberts and Samlal Singh) was evaluated within one inner city London borough where the scheme was initiated. One part of the evaluation aimed to assess the implementation of the scheme through semi-structured interviews with a range of stakeholders and an analysis of the records documenting the procedures of the project. All project staff were interviewed along with three members of the project management committee; six school teachers; and 16 each of mentors, mentored children and mothers (drawn at random from all those undergoing mentoring at the time of the project evaluation).

Although the authors concluded that this part of the evaluation revealed many strengths, they also noted some problems. In terms of strengths, schools and other stakeholders viewed the implementation of the schemes as highly professional. Teachers were keen to work with the project and valued its rapid response. Trusting relationships between mentors and children were reported to have been achieved. All children reported that they liked their mentor 'a lot' and that they trusted them, noting that he/she was fair, friendly and listened to what they had to say. There were no reports of children feeling stigmatised because they were receiving special attention. Problems highlighted by the authors included the difficulties of recruiting male mentors or those from minority ethnic groups, and concerns about the patchy nature of the delivery of the mentors' 'solution-focused' intervention. With respect to the latter, authors noted the variation in practice across mentors and uncertainty over how to identify goals and deliver interventions to meet them. Another problematic issue was the numbers of children completing the scheme. From August 1997 and March 2000, only 32 children out of 71 completed the scheme successfully.

Difficulties in evaluating strategies and ethical issues

Our review revealed a number of difficulties faced by researchers attempting to evaluate the success of strategies to support children with EBD. It also highlighted some ethical issues which will be outlined here.

Cooper *et al.* (2001) encountered difficulties in accessing pupils' perceptions in a reliable manner. They found it hard to know to what extent young children understood what was required of them in the interviews, and the purpose behind the questions. In their report, the researchers note that 'many of the children interviewed in this study did not wish to be disloyal to their teachers and schools, and gave very guarded answers to questions that asked them to compare their experience of life in the mainstream classroom with life in the 'nurture group' (p. 164). This highlights a very sensitive ethical issue not confined to this particular study. Researchers must balance their own needs to obtain information with the need to protect and maintain children's confidentiality in interviews, and sensitivity to the context in which the study is being carried out.

Lupton and Sheppard (1999, 2000) ran into serious methodological difficulties in attempting to evaluate the controlled trial which formed part of the PASBAC project. They attribute these difficulties mainly to lack of clear and direct lines of communication between the participants in the project (teachers, parents and parent support workers), resulting in patchy implementation of the project interventions, and 'contamination' between the treatment groups. Lack of funding hampered the ability of the researchers adequately to inform and train all participants in this project, which raises another important concern (see also St James-Roberts and Singh, below). As a result, no quantitative measures could be used to evaluate the impact of the project. The researchers attempted to substantiate their evaluation of the qualitative data by adopting a model distinguishing between 'immediate' and 'intermediate' outcomes, and between the contrasting perceptions of all key participants (children, parents, teachers and project staff). Nevertheless, the evidence yielded by this approach remained largely anecdotal.

This study raised an important ethical issue, addressed by the authors, concerning the training for staff delivering interventions. The parent support

workers (PSWs) in the PASBAC project were inadequately trained to deal with seriously disturbed children or those referred inappropriately to the project. In several cases, the PSW withdrew from the family and was advised to refer the problem to the social services department. This highlights the need for researchers to safeguard both adult and child participants in strategies through adequate referral procedures, training and support.

The study by Spalding (2000) highlights the difficulties faced by researchers in interpreting the results of standardized tests, and of synthesizing quantitative and qualitative evidence. Spalding used the Boxall Developmental Strands and Diagnostic Profile to assess children before and after they attended a 'quiet place' in their school, compared with a control group who did not attend. The results showed no statistically significant difference between the groups. Spalding also obtained interview data from teachers and parents of children participating in the project, suggesting that the 'quiet place' did have significant, beneficial effects. Spalding chose to interpret his results to suggest that 'there is little doubt...that the 'quiet place' intervention has a positive effect overall on emotional development' (p. 133), but there is no solid statistical evidence to support this conclusion. This study highlights the difficulties of choosing the most appropriate measures and tests to evaluate the impact of a strategy, and how to interpret the results, especially when based on a small sample size.

Spalding's report also points to an ethical and methodological issue regarding who receives, or does not receive, an intervention. Children who did not attend the 'quiet place' were sometimes jealous of those who did: 'Why are the children who go there so special? Why can't all go?' (p. 133). Researchers need to be aware of both the positive and negative implications of targeting individual children from a group, class or school to participate in an intervention; its effects on the children concerned, and on those who are not selected.

St James-Roberts and Singh (2001) discuss the optimum design for an evaluation and suggest that research designs need to be combined to evaluate interventions adequately. Their own study, using a matched group design to evaluate a mentoring project, was able to provide appropriate baseline and outcome measurements both in mentored and non-mentored children. However, it was unable to show *why* both groups of children improved over time, and was again limited by its small sample size. The researchers also acknowledge their lack of ability to provide some measures, such as independent measures of mentored children's behaviour in their home environment, to provide confirmation of parents' and children's reports. It was impossible to obtain these measures, both for practical and financial reasons.

This clearly illustrates the difficult choices many researchers face when implementing a strategy with limited resources and uncertain funding. St. James-Roberts and Singh note that funding arrangements may hamper a project from achieving its purpose. Corners may be cut in order to achieve the aims of the project and this could have ethical implications, for example in the recruitment, training and debriefing of participants (see also Lupton and Sheppard, above). Secure, adequate funding for the life of the project is a vital issue that researchers and research funders must take into consideration at all stages of planning and evaluation.

4.4 In-depth review: quality assurance results

In addition to our own quality assurance processes within the review team, our in-depth review process was also quality assured by members of the EPPI-Centre team managing this review. Members of the management team undertook data extraction for two studies included in the in-depth review and we compared their results with those of the review team. The data-extraction tool included 102 questions and a total of 447 response categories. Discrepancies between judgements made by the review team and the quality assurers were found on 18 items for Lupton and Sheppard and on 30 items for Spalding. All these discrepancies were successfully resolved through discussion.

4.5 Nature of actual involvement of users in the review and its impact

As highlighted in section 4.1 above, users had a significant impact on the choice of studies included in the in-depth review.

Table 4.1: Distribution of studies according to their weight of evidence, type of model the evaluated strategy was based upon and author's judgements on the effectiveness of strategies

Weight of evidence	Author's judgement on effects (based on quantitative estimates)											
	Effective			Ineffective			Unclear			Harmful		
	High	Medium	Low	High	Medium	Low	High	Medium	Low	High	Medium	Low
Strategies based on a psycho-therapeutic model		Cooper <i>et al.</i> (2001)** Spalding (2000)**			St James-Robert and Singh (2001 a, b)**							
<i>Weight of evidence</i>	<i>High</i>	<i>Medium</i>	<i>Low</i>	<i>High</i>	<i>Medium</i>	<i>Low</i>	<i>High</i>	<i>Medium</i>	<i>Low</i>	<i>High</i>	<i>Medium</i>	<i>Low</i>
Strategies based on a cognitive-behavioural model			Lupton and Sheppard (1999, 2000)* Sage (2000)*		St James-Robert and Singh (2001 a, b)**							
<i>Weight of evidence</i>	<i>High</i>	<i>Medium</i>	<i>Low</i>	<i>High</i>	<i>Medium</i>	<i>Low</i>	<i>High</i>	<i>Medium</i>	<i>Low</i>	<i>High</i>	<i>Medium</i>	<i>Low</i>
Strategies based on a systemic model			Lupton and Sheppard (1999, 2000)*									
<i>Weight of evidence</i>	<i>High</i>	<i>Medium</i>	<i>Low</i>	<i>High</i>	<i>Medium</i>	<i>Low</i>	<i>High</i>	<i>Medium</i>	<i>Low</i>	<i>High</i>	<i>Medium</i>	<i>Low</i>

* Reviewers concluded that the effects of the strategy were unclear due to methodological problems.

**Reviewers concluded that the results of the study on effectiveness were inconclusive due to small sample sizes/interim nature of findings.

5. FINDINGS AND THEIR IMPLICATIONS

5.1 Summary of principal findings

5.1.1 Identification of studies

In order to identify relevant studies we implemented a broad search which resulted in 1,312 citations from bibliographic databases and a further 74 papers or citations from handsearches or citation chasing. However, after screening, only 51 studies met our inclusion criteria which represents a tiny proportion of all citations screened (4%). This included ten studies described in unpublished reports. The majority of citations were excluded because they were not focused on our topic area of supporting pupils with emotional and behavioural difficulties in mainstream primary schools. However, a substantial proportion were excluded because although they were on topic, they did not report an evaluative study examining the effects of strategies for supporting children with EBD or the effectiveness of different ways of supporting or training teachers in using these strategies (n=213).

Although what we were searching for was very specific (evaluations of the effectiveness of strategies), we did not feel confident in narrowing our search to this level of specificity. As suggested by previous research, we were unable to use a study type filter on bibliographic databases, despite the fact that we were looking specifically for evaluative studies. Databases within the social sciences do not yet consistently code studies according to research design (Harden *et al.*, 1999). This lack of confidence was also based on our experiences with searching for studies for our earlier review. We found that combining several terms for 'emotional and behavioural difficulties' (e.g. emotional problems; behaviour problems) with terms for 'classroom strategies' (e.g. classroom strategies; classroom methods), cut out too many relevant studies (see Evans *et al.*, 2003). For example, it found few of the studies we had located through handsearching even if these were in fact indexed on bibliographic databases. For this piece of work, we therefore took a different approach to increase the sensitivity of our searches by combining a wider range of terms for 'emotional and behavioural difficulties' with terms for the setting we were interested in, namely primary schools.

Work on systematic and exhaustive searching within the context of systematic reviews for educational research is in its infancy. There is little empirical research which evaluates the utility of different methods of, and sources for, searching for educational research (e.g. which and how many bibliographic databases need to be searched?). However, we were able to draw on principles developed for systematic reviews in other areas to maximise the sensitivity of our search (e.g. Dickersin *et al.* 1995). Searching multiple sources was crucial; a reliance on a single source or one or two bibliographic databases would have missed a large proportion of existing studies. For example, relying only on ERIC would have missed 14 studies only identified through other sources.

Although it is not unusual in systematic reviews to have to scan through large numbers of citations eventually to identify a much smaller number of relevant studies, the processes involved in scanning such a large number is time consuming. This underscores the need for more work on searching for

educational research. For example, many of the citations we excluded (n=112) were done so on the basis of age range, despite the fact that we had only requested studies focused on primary schools.

5.1.2 Systematic map

Within the limits of our search strategy, our map uncovered the nature and extent of the potential evidence base for strategies for supporting pupils with EBD in mainstream primary schools generated over the period 1999 to 2002. The majority of studies have been conducted in the US (68%) with far fewer conducted in the UK and none in European countries. This finding is in line with our earlier review which found only four studies conducted in the UK and two in other European countries.

These figures may reflect bias in the sources searched towards studies published in the UK and the US. They certainly reflect an English language bias (only one study report was excluded on the basis of language) and European studies outside the UK may have been located if different databases had been searched.

Our advisory group highlighted the importance of attending to context in mapping the evidence base, and this raised interesting differences in the kinds of strategies evaluated in different countries and the types of evaluation designs and methods employed.

The strategies which have been most frequently evaluated were those based on cognitive behavioural models and implemented by teachers working in collaboration with others, professionals (such as psychologists or social workers), parents or even children themselves. Although, overall, similar numbers of studies evaluated strategies targeting the four types of behaviours (aggressive, disruptive, off-task and social difficulties), strategies evaluated outside the US tend to target social difficulties more often. This may be partly explained by the differences in the theoretical models which most frequently underpin evaluated strategies in different countries. Outside the US, strategies based on behavioural models do not appear to be very popular; none of the studies in the UK evaluated these kinds of strategies compared to 30% (n=13) of the studies in the US. However, studies conducted in the UK were much more likely to evaluate strategies based on a psychotherapeutic model (seven of the nine UK studies compared with only one of the 35 US studies).

It is encouraging to note that over one-third of the studies (39%) evaluated strategies by comparing groups receiving the particular strategy under test with groups who did not. This can help to rule out the possibility that any improvement in outcomes (e.g. aggressive behaviour) is simply due to the passage of time or other events. A quarter of the studies used random methods to allocate children or teachers. This can help to rule out the possibility that any improvement in outcomes is simply due to known or unknown differences between the two groups of children or teachers being compared. Similar numbers of studies across countries used an evaluation design which employed a control or comparison group (RCT or trial). Only a quarter of the studies combined the strengths of collecting both 'qualitative' and 'quantitative' data. All RCTs and trials in the UK collected qualitative data to examine processes alongside quantitative estimates of impact compared to only two of the 12 RCTs and trials in the US. Sample sizes were a cause of concern. Just under half the studies (45%) employed sample sizes of fewer than 20 children or teachers.

Our map suggested a tiny potential evidence base for specifically informing ways of supporting trainee teachers who may encounter children with EBD in their primary school classrooms. Only four of our 51 included studies were judged by reviewers to evaluate ways of supporting teachers to implement strategies. Only one of these studies was from the UK and none focused specifically on initial teacher training. This is clearly a gap for research commissioners in the ITE sector.

5.1.3 Synthesis of findings from studies in in-depth review

Our in-depth review highlighted the fragmentary nature of the evidence base from the five UK studies conducted from 1999 to 2002. There was no recent evidence on the effectiveness of strategies based on a behavioural model. For all other strategies, there was some evidence on effectiveness, but there were no studies judged to have provided a high weight of evidence for answering the review question. The main implications from this part of the review concern the future development of an evidence base.

Each of the studies included in the in-depth review described strategies aimed at bringing about long-term change in the behaviour of pupils with EBD. The strategies were designed to tackle a complex array of problem behaviours, including aggressive, off-task, disruptive and social difficulties. Thus they were not looking for simple solutions or for strategies merely concerned with the containment of problem behaviour. This makes the evaluation and synthesis of the findings rather complicated, since there were no clear indications of the effectiveness of the strategies. Although for four studies, authors concluded positive effects, reviewers had to qualify these statements due to methodological problems with each one.

One of the major factors that was reported as inhibiting the proper implementation and evaluation of some of the strategies was that there had not been sufficient time and funding for adequate training of staff. This lack of time and funding had also meant that the projects were not implemented over a sufficient time period to assess their effectiveness properly. For strategies targeted at making significant changes in behaviour over time, it is obviously necessary that they should be sustained and that evaluation should look at longer-term as well as immediate impacts. One study evaluating the effectiveness of 'nurture groups' was an interim report. Its final report may be able to provide data about any longer-term impact.

The extent to which the strategies evaluated by studies included in the in-depth review would be relevant and applicable to the work of individual classroom teachers working in isolation is debatable. Each study provides useful insights into ways of supporting pupils with EBD, but each also requires the input of skilled professionals from outside the classroom, or decisions by school management to set up a particular provision (such as a 'nurture group' or a 'quiet place'). Thus, it would not be easy for individual teachers to implement these types of strategies on an individual basis in their classrooms.

Nevertheless, the strategies and the theoretical models underpinning them add to a broader understanding of the aetiology of emotional and behavioural difficulties and the types of approaches that are currently being implemented in UK schools. The UK studies published between 1999 and 2002, suggest a move in the UK towards strategies using a 'whole school' approach for their successful

implementation. These studies have also shown a trend towards involving parents in the interventions, and also towards working actively with parents to improve their relationships with their children.

If the strategies evaluated by these studies reflect moves in current policy, the message to primary school trainee teachers is that they should expect to work in a multi-disciplinary way with colleagues in school and from other services to provide support for the pupils with EBD in their classrooms.

5.2 Strengths and limitations of this systematic review

The searches for this piece of work identified a much larger number of studies than the searches for our earlier review. We had a much larger number of citations to sift through (1,312 compared with 234 in the previous review) and identified nearly twice as many studies (51 as opposed to 28 in the previous review). This difference is striking given that the current work only covered a three-year period. It may be that our search strategy was more sensitive as it did not filter out studies which did not identify themselves as reporting on classroom strategies. It may also be the case that there has been an increase in the number of studies carried out in recent years. The scope for this piece of work was also slightly broader; we included studies which would have been excluded from the previous review (e.g. those examining outcomes for teachers only) and considered studies evaluating a broader range of strategies.

However, due to time constraints, we did not contact experts in the field to find additional, especially unpublished, studies and we did not include studies published in a language other than English. These are weaknesses of the review. Other limitations in our search strategy are discussed below. Other strengths and limitations of the review fell into three areas: problems of scale and scope; defining EBD and intervention classifications; and the ability of the review findings to inform policy and practice. Each of these are discussed in turn.

5.2.1 Problems of scale and scope

The review was carried out over a very short time span (three months) compared with the time taken for similar reviews. (It has been estimated that most systematic reviews take at least six months with two full-time researchers.) However, the strict quality control over searching for studies, keywording and data-extraction were not compromised by the short timescale, as these were done according to the framework set up by the EPPI-Centre.

The short timescale did, however, pose a limitation on the number of studies which could be included in the in-depth review. Of the 51 identified relevant studies, only five were reviewed in depth. As described in Chapters 2 and 4, we restricted inclusion of studies according to whether they evaluated strategies implemented in the UK. On advice from those working in ITE, it was suggested that the findings of such studies would be more directly relevant to the contexts in which trainee teachers and teacher educators might find themselves. Thus, our synthesis of findings on effectiveness only applies to strategies evaluated in the UK. We also restricted inclusion of studies according to whether they employed a control or comparison group in their evaluation design. Again this means that our

findings about effectiveness only apply to strategies implemented in the UK which have been rigorously evaluated.

Comparing this review with other systematic reviews with a similar scope to this one reveals strengths, but also significant limitations. All these differed in their stated scope and aims to this review, but could in practice have included the same studies. Quinn *et al.* (1999) examined the effectiveness of a specific type of strategy – social skills training interventions – for improving social skills (e.g. social problem-solving) or reducing problem behaviours (e.g. disruptive behaviour) amongst children and young people with emotional and behavioural disorders. Stage and Quiroz (1997) examined the effectiveness of school-based interventions for reducing one specific outcome – disruptive classroom behaviour – amongst children and young people in mainstream schools. Mytton *et al.* (2002) examined the effectiveness of school-based interventions for reducing aggressive behaviour, school/agency responses to acts of aggression, or violent injuries amongst children and young people who had been identified as ‘at-risk’ for aggressive behaviour. The strength of our review lies in its explicit attempt to focus on strategies for supporting children with EBD in mainstream schools and in its orientation towards informing teacher training in this area. Our review is also complemented by the second review commissioned by the Teacher Training Agency on behaviour management which focuses on the use of theories rather than strategy effectiveness (Powell and Todd, 2003).

However, comparing the searches used in the Mytton *et al.* review with the searches we employed pinpoints a mismatch between the inclusion criteria employed in our review and our search strategies. Many of the studies included in the Mytton *et al.* (2002) review would have met our inclusion criteria, if they had been published after 1999. However, we would not have found most of these studies with the search strategies we employed because we did not search using specific terms such as ‘aggressive behaviour’ or ‘conduct disorder’. The results of our map should therefore be interpreted in this context. It is likely that our search strategies provided a particular slice of all the potentially relevant literature, bounded by the use of generic search terms such as ‘emotional and behavioural difficulties’. The conclusions we draw from our map about relevant research activity may therefore only apply to research studies which have been characterised in this way by study authors. It may not reflect, for example, research activity which is labelled by study authors as being concerned with ‘violence-prevention’. Other systematic reviews in these related areas, such as that by Mytton *et al.* (2002), should therefore be drawn upon when using the findings of our map.

5.2.2 Defining EBD and intervention classification

Defining children with emotional and behaviour difficulties is problematic. Like the reviews by Stage and Quiroz (1997) and Quinn *et al.* (1999), we relied on whether study authors labelled children with emotional and behavioural difficulties or screened children according to their level of a particular behaviour (e.g. disruptive, aggressive). As Quinn *et al.* (1999) note, in the absence of shared methods for assessing children for EBD, it is difficult to be confident that we are comparing studies of similar populations. The variation in the way different studies identified children with EBD could also be taken to undermine the existence of EBD as a coherent and/or useful category of children.

The strategies that were evaluated in the studies we identified for this review all fit into one of our four categories of theoretical models. Strategies underpinned by different theoretical approaches may well have been evaluated by studies which we did not identify. There was a bias towards studies published in educational and psychological journals and this may have limited the range of strategies represented by the studies.

Adoption of different theoretical perspectives may reflect strongly held value positions about the ethical and moral issues which underpin this field, in particular about the causes or aetiology of EBD. For example, behavioural approaches to developing strategies for reducing problem behaviour using rewards and sanctions are often characterised by those adopting different theoretical approaches as harbouring a simplistic view of the causes of behaviour. On the other hand, for those adopting cognitive-behavioural and psychotherapeutic approaches, the expectation is that there will be changes within the individual, either through learning new skills and insights, or by having emotional damage 'repaired', so that the individual will be able to behave in a more acceptable or less self-damaging way. As different theoretical perspectives tend to go in and out of fashion, the emphasis put on the role of these different theories in developing effective, appropriate and ethical strategies is something which should be put to empirical test.

We used a relatively simplistic taxonomy of intervention strategies: behavioural, cognitive behavioural, systemic and psychodynamic. The review by Stage and Quiroz (1997) used a different taxonomy with five categories of intervention strategy: behavioural, cognitive-behavioural, individual counselling, parent training and multi-modal interventions. In a review of the status of intervention research concerned with modifying the behaviours of children and youth with emotional and/or behavioural disorders, Dunlap and Childs (1996) again used a different system and classified interventions classified as skills training, self-management, antecedent-based interventions, consequence-based intervention and peer-mediated interventions. It is not clear to what extent these categories overlap or whether different reviewers would classify the interventions in the same way using these taxonomies. Whilst our taxonomy was a useful heuristic device for grouping studies, we do not believe that it is the only way to distinguish between different strategies evaluated in studies or that it is necessarily the most useful. Indeed some of the multi-component strategies evaluated in the studies included in our in-depth review could not easily be classified into any one of our four categories as they often contained elements of them all. A better approach which could be tested in the future should perhaps focus on classifying intervention components, as well as try to capture the underlying theoretical underpinnings of the strategy.

5.2.3 Informing policy and practice

The greater number of studies identified enabled us to provide a detailed mapping of a larger number of studies than had been possible in the previous review. This revealed a number of interesting differences between studies carried out in the US and those carried out in the UK. This confirmed the finding of the previous review, that support for pupils with EBD in the US is more likely to be based within a behavioural or cognitive-behavioural theoretical paradigm than that in the UK, which was more likely to be based on a psychotherapeutic model. However, as noted above, this finding may only apply to the EBD labelled

research literature, rather than to research literature on conduct disorder, aggression or violence prevention.

As far as studies focused on initial teacher education (ITE) are concerned, we found very little research evidence relevant to informing effective ways of supporting trainee primary school teachers in relation to strategies for pupils with EBD. This is an accurate reflection of the amount of research of this kind within the boundaries of the methods used in our review. Our search strategy was not specifically tailored to find those studies which evaluated ways of supporting or training teachers in the use of strategies for supporting primary-aged pupils with emotional and behavioural difficulties. We expected our broad strategies to pick up these studies. This was indeed the case, although the number of studies meeting our inclusion criteria was very small (i.e. they had to *evaluate* support or training rather than describe views or survey practice). An exercise exploring whether using a 'teacher training' focused search identifies more of these kinds of studies would be worth undertaking to check whether this is the case.

The lack of any reference in the majority of studies to the training aspects of implementing a new intervention restricted the observations we can make about this aspect of the review. There are some references to difficulties caused by lack of training, but none concern ITE. The advice from our advisory group indicated that trainee teachers need a broad introduction to EBD and the theoretical frameworks within which it is understood, rather than training in specific strategies. This review gives some indication of the types of approaches used and the models which underpin them, and so may be useful as part of the general conceptual training of teachers about the needs of pupils with EBD.

A final limitation of the review is related to the fact that we did not have representation from teacher trainees on our advisory group (nor from parents or students themselves). Engaging a wider range of review users has the potential to change the scope and/or emphasis of a particular review. It would be interesting to explore to what extent this review would look different had it been driven by the concerns of trainee teachers (or parents or students) rather than those involved in providing initial teacher education.

5.3 Implications

5.3.1 Policy and practice

This review has implications both for the development of policy and practice with regard to supporting pupils with EBD and for the development of policy and practice in initial and continuing teacher education in England.

EBD support

The Department for Education and Skills (DfES) in England is currently actively engaged in policy development in this area through its funding of Behaviour Improvement Programmes in 61 LEAs across England (34 in phase 1 and 27 in phase 2). A number of different strategies are suggested as part of this programme, for example, multi-agency support for pupils at risk of EBD, Learning Mentors and 'extended schools' with activities such as Breakfast Clubs. It is clear, from our review, that many of these strategies have not yet been evaluated

by rigorous research, but are experimental and will need to be evaluated if they are to be used as a basis for policy development in this area.

At the LEA level, there are a number of different approaches to EBD support promoted by the different agencies involved at local level: Behaviour Support Services, Psychology Services and Child Mental Health Services. Each will be informed by their own paradigms and theoretical approaches, but may not necessarily be working in a coherent way. The search strategy reported in Chapter 2 of this review indicates that a range of different journals is read by different professional groups, without much overlap between them. Research reviews, such as the one reported here, can bring together findings from a range of professional perspectives to inform joint policy-making across services in local authorities, to provide a more 'joined-up' approach to children's EBD – in school, in the home and in the wider community.

There also needs to be a coherence in policy about support for EBD at the level of the school. As we noted in Chapter 4, the strategies reviewed required a 'whole school' approach for their implementation. Individual teachers could not, on their own, set up and carry out a 'nurture group' or a mentoring scheme. Within the paradigm currently used to develop and implement strategies for behaviour management in English schools, there is a strong move towards multi-disciplinary and 'whole school' approaches. Schools are required to have behaviour policies which are ratified by governing bodies, and which should be developed in conjunction with the school staff. Findings from the review about parental involvement also indicate that parents and pupils should be involved in developing behaviour management policies.

Initial teacher education (ITE)

As discussed earlier, there is little in the research included in this review that relates to ITE. It seems that, in the early stages of their formation and career development, it is more important for trainee teachers to have an understanding of the contextual factors surrounding EBD and the broad range of approaches that can be used to support pupils. The previous review gave some examples of strategies based on behavioural or cognitive-behavioural models which could be used by individual teachers in their classrooms. The current review, based only on recent UK studies, strongly indicates that 'whole school' and multi-disciplinary approaches are most frequently used. Thus the training needs of beginning teachers may be more likely to be for developing the skills of recognising and understanding children's EBD and working with others (including parents) in developing strategies and offering support, rather than in the individual application of particular interventions.

5.3.2 Research

The findings of this review have implications for both new primary research and future systematic reviews.

Primary research

Given the lack of clarity about the effectiveness of a number of widely used strategies, we recommend that practitioners and researchers work in partnership to carry out rigorous studies of the strategies currently used. Such partnerships

need actively to include children and parents, and to take account of their views on the appropriateness of strategies.

There is a clear need for research evaluating the effectiveness of different ways of supporting or preparing primary school teachers (trainee or otherwise) to include children with emotional and behavioural difficulties in their classrooms. Again researchers need to work in collaboration with ITE providers as well as trainee teachers.

Given the problems identified with the studies included in the in-depth review, a number of recommendations can be made about how research which evaluates the effectiveness of strategies should be carried out. We recommend the following:

- the use of more than one group so that one group receiving the strategy under evaluation can be compared with a group not receiving the intervention;
- the use of random allocation (where possible) of children or classes or schools to groups;
- careful attention being paid when random allocation is not possible, to obtaining groups that are matched on socio-demographic characteristics and levels of emotional and behavioural problems;
- more effort to obtain measures of outcome over the long term, potentially into adolescence and even adulthood, when appropriate;
- the use of larger sample sizes to ensure that studies are adequately powered to detect the effects of strategies;
- the collection and appropriate use of 'qualitative' process data alongside 'quantitative' data estimating the effects of strategies.

As it is impossible to assess the reliability of the results of evaluation studies unless there is a clear description of the methods used for the evaluation, we also recommend that more careful attention needs to be paid to providing full details of research methods in research reports (e.g. data-collection tools, data-analysis methods and sample characteristics). Publications should also make this information available, either in the published paper, or as a technical appendix available from the authors. Journal editors need to play a role in ensuring this.

Systematic reviews of research

Reflections on the strengths and weaknesses of this systematic review suggests the following implications for future reviews in this or other areas of education:

- This review should be extended to other areas identified in the map, and used to update the previous preview.
- It would be unwise to search for educational research on education-specific databases only (e.g. ERIC). Substantial numbers of studies evaluating the effects of strategies for supporting pupils with emotional and behavioural difficulties in mainstream primary classrooms were found on general social

science databases (e.g. the Social Science Citation Index) as well as discipline specific ones (e.g. PsycINFO).

- Increasing the sensitivity of a search to identify these studies results in more studies. There is a need to explore what kind of impact this might have on conclusions about the effects of strategies for supporting pupils with emotional and behavioural difficulties in mainstream primary classrooms.
- Strategies which are relevant to supporting pupils experiencing emotional and behavioural difficulties in mainstream primary schools are diverse in their approach and aims, ranging from community-based mentoring schemes which have a long-term goal of preventing crime to short-term behavioural strategies implemented in the classroom. The findings from such diverse approaches are difficult to synthesise. Future systematic reviews could consider narrowing their focus to particular types of strategies or particular types of outcome.

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APPENDIX 1.1: Advisory Group Membership

Esme Glauert, Course Leader for Primary PGCE, Institute of Education, University of London

Sylvia Lucas, Cluster Group Co-ordinator for Primary PGCE, Institute of Education, University of London

Andy Ash, Senior Tutor and Course Director PGCE Secondary, Institute of Education, University of London

Alison Kirton, Co-ordinating Tutor for the PGCE in Social Science, Educational Foundations and Policy Studies, Institute of Education, University of London

Paul Moses, Standards Support Team, Teacher Training Agency

APPENDIX 2.1: Exclusion criteria

The following tool was used to screen citations or full reports. The instructions given below relate to screening citations only.

Please check each citation against the following criteria in the order they appear on this sheet. (For example, if a study is excluded on criterion 3, it should already have met 1 and 2.)

Keyword	Exclusion criteria
1_EXCLUDE	Do not focus on <u>children (aged 4 to 12)</u> or on <u>teachers/trainee teachers</u> of children of this age group.
2_EXCLUDE	Do not focus on <u>supporting children with emotional and behavioural difficulties</u> or <u>training teachers to support children with emotional and behavioural difficulties</u> (e.g. they focus on general discipline problems/ training teachers to deal with general discipline problems).
3_EXCLUDE	Do not focus on <u>strategies for supporting children with emotional and behavioural difficulties within classrooms</u> - i.e. the strategy must specifically aim to help children with EBD remain in classrooms, but the strategy may not necessarily take place in the classroom (e.g. a social skills training programme delivered outside of the classroom in order for pupils to behave in a socially appropriate manner in the classroom).
4_EXCLUDE	Focus on strategies to support pupils <u>non-mainstream classrooms</u> (e.g. within a resource room or a special class or within a special school).
5_EXCLUDE	Focus solely on <u>school wide strategies</u> .
6_EXCLUDE	Focus on <u>drug or psychiatric strategies</u>
7_EXCLUDE	Do not <u>evaluate the impact</u> of the strategy on children or do not evaluate the impact of training packages/courses on teachers to use strategies to support pupils in mainstream classrooms (e.g. surveys of teacher views; discussion paper).
8_EXCLUDE	Their results have not yet been <u>reported in full</u> (e.g. at the time of the review, only baseline data has been reported).
9_EXCLUDE	Are published in a report <u>written in a language other than English</u> .
X_EXCLUDE	The report is dated before 1999 (does not apply to ITE studies)

If a reference cannot be excluded on the basis of its title and abstract it should be keyworded '**GET_ME**'. If you are unsure and want to flag a reference for discussion, keyword it CHECK.

Dealing with duplicates: The database should be ordered alphabetically by author so that duplicates are easier to spot. Duplicate references should be deleted. However, before deletion, please copy the source database keyword (e.g. ERIC) into the record which is to be retained. This will enable us to see which databases yielded the most references and we'll also be able to provide an accurate audit of the results of our searches.

APPENDIX 2.2: Search strategy for bibliographic databases

ERIC

Search terms for EBD and interventions

- #01 exp. emotional problems
 - #02 exp. emotional disturbances
 - #03 exp behavior problems
 - #04 exp attention deficit disorders
 - #05 exp hyperactivity
 - #06 exp behavior disorders
 - #07 exp behavior modification
 - #08 exp problem children
 - #09 "disruptive behaviour".mp.
 - #10 "disruptive pupils".mp.
 - #11 "nurture groups".mp.
 - #12 "circle time".mp.
- #13 #01 or #02 or #03 or #04 or #05 or #06 or #07 or #08 or #09 or #10 or #11 or #12

Search terms for school phase

- #14 exp elementary education
 - #15 exp elementary secondary education
 - #16 exp primary education
 - #17 "primary schools".mp.
- #18 #14 or #15 or #16 or #17

Final result

- #19 #13 and #18. Limit to years 1999-2002

BEI

Search terms for EBD and interventions

- #01 exp emotional problems
- #02 exp emotional disturbances
- #03 exp behaviour problems
- #04 exp attention deficit disorders
- #05 exp hyperactivity
- #06 exp behaviour disorders
- #07 exp behaviour modification
- #08 exp problem children
- #09 exp disruptive pupils
- #10 disruptive behaviour.mp.
- #11 attention deficit hyperactivity disorder.mp.
- #12 nurture groups.mp.
- #13 circle time.mp.

(mp=title, abstract, heading word)

- #14 #01 or #02 or #03 or #04 or #05 or #06 or #07 or #08 or #09 or #10 or #11 or #12 or #13

Search terms for school phase

- #15 exp primary schools
- #16 exp primary education
- #17 exp first schools
- #18 exp infant schools
- #19 exp junior schools
- #20 exp middle schools
- #21 exp elementary schools

- #22 #15 or #16 or #17 or #18 or #19 or #20 or #21

Final result

- #23 #14 and #22. Limit to years 1999-2002

SPECTR

Search terms for EBD

- #01 emotional and behavioral difficulties
- #02 behavior problems
- #03 behavior disorders
- #04 emotional problems
- #05 problem behavior
- #06 hyperactivity
- #07 attention deficit disorder
- #08 emotional and behavioural difficulties
- #09 behaviour problems
- #10 behaviour disorders
- #11 problem behaviour

- #12 #01 or #02 or #03 or #04 or #05 or #06 or #07 or #08 or #09 or #10 or #11

Search terms for Intervention

- #13 circle time
- #14 nurture groups

- #15 #13 or #14

Final result

- #16 #12 and #15

PSYCINFO

Search terms for EBD and interventions

- #01 emotional and behavioural difficulties
- #02 emotional adjustment
- #03 emotionally disturbed
- #04 emotional immaturity
- #05 emotional security
- #06 emotional inferiority
- #07 adjustment disorders
- #08 psychological needs
- #09 emotional trauma
- #10 psychological needs
- #11 emotional trauma
- #12 attention deficit disorder
- #13 attention deficit disorder with hyperactivity
- #14 behaviour problems
- #15 behaviour disorders

- #16 behaviour modification
- #17 classroom behaviour modification
- #18 disruptive behaviour
- #19 disruptive pupils
- #20 nurture groups
- #21 circle time

- #22 #01 or #02 or #03 or #04 or #05 or #06 or #07 or #08 or #09 or #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 or #18 or #19 or #20 or #21

Search terms for school phase

- #23 elementary schools
- #24 elementary school students
- #25 primary schools
- #26 primary education
- #27 elementary secondary education

- #28 #23 or #24 or #25 or #26 or #27

Final result

- #29 #22 and #28

ASSIA

Search terms for EBD and interventions

- #01 disruptive (kw)
- #02 circle time (kw)
- #03 nurture groups (kw)
- #04 hyperactivity (kw)
- #05 attention deficit disorder (kw)
- #06 emotion*(kw)
- #07 behaviour*

- #08 #01 or #02 or #03 or #04 or #05 or #06 or #07

Search terms for school phase

- #09 primary school (kw)
- #10 elementary school (kw)
- #11 elementary secondary school
- #12 primary education

- #13 #09 or #10 or #11 or #12

Final result

- #14 #08 and #13

SSCI

Search 1: EBD and school phase

Search terms for EBD and interventions

- #01 emotional and behavioural difficulties
- #02 behavio* problems
- #03 behavio* disorders
- #04 emotional problems
- #05 problem behavio*
- #06 hyperactivity
- #07 attention deficit disorder

- #08 adhd
- #09 behavio* modification
- #10 circle time
- #11 nurture groups

- #12 #01 or #02 or #03 or #04 or #05 or #06 or #07 or #08 or #09 or #10 or #11

Search terms for school phase

- #13 primary school*
- #14 primary education
- #15 elementary school*
- #16 elementary education
- #17 middle school*

- #18 #13 or #14 or #15 or #16 or #17

Exclusion terms

- #19 medication
- #20 drug treatment
- #21 ritalin

- #22 #19 or #20 or #21

Final result

- #23 #12 and #18 not #22

Search 2: EBD and teacher training

Search terms for EBD and interventions

- #01 behavio* management
- #02 manag* behavio*
- #03 emotional and behavioural difficulties
- #04 behavio* problems
- #05 behavio* disorders
- #06 emotional problems
- #07 problem behavio*
- #08 hyperactivity
- #09 attention deficit disorder
- #10 adhd
- #11 behavio* modification
- #12 circle time
- #13 nurture groups

- #14 #01 or #02 or #03 or #04 or #05 or #06 or #07 or #08 or #09 or #10 or #11 or #12 or #13

Search terms for teacher training

- #15 teacher training
- #16 teacher education
- #17 student teacher*
- #18 train* teach*
- #19 continuing professional development
- #20 PGCE
- #21 in service training

- #22 #15 or #16 or #17 or #18 or #19 or #20 or #21

Exclusion terms

#23 medication

#24 drug treatment

#25 ritalin

#26 #23 or #24 or #25

Final result

#27 #14 and #22 not #26

APPENDIX 2.3: Journals handsearched

List of journals which were handsearched

Journal title	Volumes checked
American Educational Research Journal	36, 37, 38, 39 (issue 4 missing)
Behavior Modification	23, 24, 25, 26
British Educational Research Journal	25, 26, 27, 28
British Journal of Educational Psychology	69, 70, 71 (72 missing)
British Journal of Special Education	26, 27 (28 and 29 missing)
Cambridge Journal of Education	29, 30, 31 (32 missing)
Child Psychology and Psychiatry Review	4 (issue 1 missing), 5, 6. (7 missing)
Educational Psychology	19, 20, 21 (issue 1 missing), (22 missing)
Emotional and Behavioural Difficulties	4, 5, 6, 7
Exceptional Children	65, 66, 67, 68 (issues 1 and 2 missing)
International Journal of Inclusive Education	3, 4 (issue 1 missing), 5, 6
Intervention in School and Clinic	34, 35, 36, 37
Journal of Child Psychology and Psychiatry	40, 41, 42, 43 (second part of volume missing)
Journal of School Psychology	37 (issue 2 missing), 38, 39 (issue 6 missing), 40 (issue 4 missing)
Learning and Instruction	9, 10, 11, 12 (issues 2, 3, 6 missing)
Research in Education	61, 62, 63, 64, 65, 66, 67, 68
Research Papers in Education	14, 15, 16, 17
Review of Educational Research	69, 70, 71, 72 (issue 4 missing)
Support for Learning	15, 16, 17 (issue 4 missing), (14 missing)
Teaching Exceptional Children	31, 32, 33
Theory into Practice	38, 39, 40, 41

Journals listed in protocol but not handsearched

Journal title	Reason why journal was not searched
Behaviour Modification with Children	Replaced by another publication which has now ceased publication
Behaviour Research and Therapy	Only available in Institute of Education (London) library up until 1987
Behavior Research of Severe Developmental Disabilities	Ceased publication
Journal of Emotional and Behavioural Disorders	The Institute of Education (London) library does not take this journal.
Maladjustment and Therapeutic Education	Continued by 'Therapeutic Care and Education'; in turn, this was replaced by 'Emotional and Behavioural Difficulties', which was handsearched.
Therapeutic Education	Only available in Institute of Education (London) library up until 1980

APPENDIX 2.4: Keywording codes

Section A: The EPPI-Centre Core Keywording Strategy

A.1 Identification of report	<ul style="list-style-type: none"> A.1.1 Citation A.1.2 Contact A.1.3 Handsearch A.1.4 Unknown A.1.5 Electronic database
A.2 Status	<ul style="list-style-type: none"> A.2.1 Published A.2.2 In press A.2.3 Unpublished
A.3 Linked reports <i>Is this report linked to one or more other reports in such a way that they also report the same study?</i>	<ul style="list-style-type: none"> A.3.1 Not Linked A.3.2 Linked <i>(Please provide bibliographical details and/or unique identifier.)</i>
A.4 Language <i>(Please specify.)</i>	<ul style="list-style-type: none"> A.4.1 Details
A.5 In which country/countries was the study carried out? <i>(Please specify.)</i>	<ul style="list-style-type: none"> A.5.1 Details
A.6 What is/are the topic focus/foci of the study?	<ul style="list-style-type: none"> A.6.1 Assessment A.6.2 Classroom management A.6.3 Curriculum A.6.4 Equal opportunities A.6.5 Methodology A.6.6 Organisation and management A.6.7 Policy A.6.8 Teacher careers A.6.9 Teaching and learning A.6.10 Other topic focus
A.7 Curriculum	<ul style="list-style-type: none"> A.7.1 Art A.7.2 Business Studies A.7.3 Citizenship A.7.4 Cross-curricular A.7.5 Design & Technology A.7.6 Environment

	<p>A.7.7 General</p> <p>A.7.8 Geography</p> <p>A.7.9 Hidden</p> <p>A.7.10 History</p> <p>A.7.11 ICT</p> <p>A.7.12 Literacy – first language</p> <p>A.7.13 Literacy further languages</p> <p>A.7.14 Literature</p> <p>A.7.15 Maths</p> <p>A.7.16 Music</p> <p>A.7.17 PSE</p> <p>A.7.18 Phys. Ed.</p> <p>A.7.19 Religious Ed.</p> <p>A.7.20 Science</p> <p>A.7.21 Vocational</p> <p>A.7.22 Other curriculum</p> <p>A.7.23 The material does not focus on curriculum issues</p>
A.8 Programme name (please specify)	A.8.1 Details
A.9 What is/are the population focus/foci of the study?	<p>A.9.1 Learners</p> <p>A.9.2 Senior management</p> <p>A.9.3 Teaching staff</p> <p>A.9.4 Non-teaching staff</p> <p>A.9.5 Other education practitioners</p> <p>A.9.6 Government</p> <p>A.9.7 Local education authority officers</p> <p>A.9.8 Parents</p> <p>A.9.9 Governors</p> <p>A.9.10 Other population focus</p>
A.10 Age of learners (years)	<p>A.10.1 0-4</p> <p>A.10.2 5-10</p> <p>A.10.3 11-16</p> <p>A.10.4 17-20</p> <p>A.10.5 21 and over</p>
A.11 Sex of learners	A.11.1 Female only

	<p>A.11.2 Male only</p> <p>A.11.3 Mixed sex</p>
A.12 What is/are the educational setting(s) of the study?	<p>A.12.1 Community centre</p> <p>A.12.2 Correctional institution</p> <p>A.12.3 Government department</p> <p>A.12.4 Higher education institution</p> <p>A.12.5 Home</p> <p>A.12.6 Independent school</p> <p>A.12.7 Local education authority</p> <p>A.12.8 Nursery school</p> <p>A.12.9 Post-compulsory education institution</p> <p>A.12.10 Primary school</p> <p>A.12.11 Pupil referral unit</p> <p>A.12.12 Residential school</p> <p>A.12.13 Secondary school</p> <p>A.12.14 Special needs school</p> <p>A.12.15 Workplace</p> <p>A.12.16 Other educational setting</p>
A.13 Which type(s) of study does this report describe?	<p>A.13.1 Description</p> <p>A.13.2 Exploration of relationships</p> <p>A.13.3 Evaluation</p> <p>A.13.4 Evaluation: Naturally occurring</p> <p>A.13.5 Evaluation: Researcher-manipulated</p> <p>A.13.6 Development of methodology</p> <p>A.13.7 Review</p> <p>A.13.8 Review: Systematic review</p> <p>A.13.9 Review: Other review</p>
A.14 Have keywords been applied in all categories?	<p>A.14.1 Yes</p> <p>A.14.2 No (please specify) <i>Please state here if keywords have not been applied from any particular category and the reason why (e.g. no information provided in the text)</i></p>
A.15 Type of outcome evaluation	<p>A.15.1 Randomised controlled trial</p> <p>A.15.2 Randomised trial (non-randomised)</p>

	<p>A.15.2 Controlled trial (non-randomised)</p> <p>A.15.3 Reversal design</p> <p>A.15.4 Pre- and post-test only</p> <p>A.15.5 Post-test only</p> <p>A.15.6 Other design</p>
A.16 Sample size	<p>A.16.1 N= 1</p> <p>A.16.2 n > 1 < 10</p> <p>A.16.3 n > 10 < 20</p> <p>A.16.4 n > 20</p>
A.17 Which type(s) of data are collected?	<p>A.17.1 Quantitative</p> <p>A.17.2 Qualitative</p>

Section B: Review-specific keywords

B.1 Which search found this report?	<p>B.1.1 Previous review searches</p> <p>B.1.2 ITE search</p> <p>B.1.3 Update to previous review</p>
B.2 Description of problem behaviour	<p>B.2.1 Aggressive <i>Aggressive behaviour, such as arguing, fighting, name-calling, etc.</i></p> <p>B.2.2 Disruptive <i>Disruptive behaviour, characterised by calling out in class, interfering with others' possessions, talking to others and disturbing their work</i></p> <p>B.2.3 Off-task <i>Off-task behaviour, characterised by not engaging in the work set by the teacher, fiddling with pencils and other equipment, wandering round the classroom, etc.</i></p> <p>B.2.4 Socially inadequate behaviour <i>Socially inadequate behaviour, such as inappropriate attempts to engage with</i></p>

	<p>B.3.2 Cognitive behavioural <i>Cognitive behavioural models, which are an elaboration of learning theory to take account of the capacity of individuals to understand and reflect on their behaviour.</i></p> <p>B.3.3 Psycho-dynamic <i>The psycho-dynamic model is based on theories of parent-child relationships and using therapeutic approaches to remediate the emotional problems which have led to problem behaviour.</i></p> <p>B.3.4 Systemic <i>Systemic models take account of the organisational context within which inappropriate behaviour occurs and attempt to change behaviour by modifying the context.</i></p> <p>B.3.5 Other (<i>Please describe.</i>)</p>
B.4 Personnel involved in strategy delivery	<p>B.4.1 Behaviour support staff</p> <p>B.4.2 Classroom assistant</p> <p>B.4.3 Non-teaching staff</p> <p>B.4.4 Parents</p> <p>B.4.5 Peer</p> <p>B.4.6 Psychiatrist</p> <p>B.4.7 Psychologist</p> <p>B.4.8 Researcher</p> <p>B.4.9 SENCO</p> <p>B.4.10 Senior management</p> <p>B.4.11 Social worker</p> <p>B.4.12 Special education teacher</p> <p>B.4.13 Student teacher</p> <p>B.4.14 Teaching staff</p> <p>B.4.15 Other</p> <p>B.4.16 Not stated</p>
B.5 Does the report address specific issues relevant to ITE? <i>i.e. informing and supporting teachers' use of the strategy</i>	<p>B.5.1 Yes</p> <p>B.5.2 No</p>
B.6 Is the strategy...	<p>B.6.1 ...a whole class strategy?</p> <p>B.6.2 ...targeted at specific individuals?</p>

APPENDIX 3.1: Details of studies included in the systematic map

Study ID	Country	Problem behaviour targeted by strategy	Theoretical model underlying strategy	Brief details of strategy	Evaluation details	Characteristics of children	Evaluation of any support given to teachers?
Barnes (2000)	UK: England	Unclear – strategy tries to change ‘negative’ or ‘irrational thinking’	Psycho-therapeutic	Based on ‘rational-emotive behaviour therapy’ a board game was used by teachers with children who had been placed in a ‘nurture group’. Children took turns to pick up ‘advice cards’ from the character ‘Mrs Miggins’. Advice challenged negative thinking and offered positive ways for dealing with problems.	Design: Post-test only Sample size: 10 Types of data: Qualitative, describing teacher and children’s views on the impact of the strategy.	Age: 10 years Sex: Mixed (no further details) EBD: Children were those difficult to manage in class.	No
Barrett and Turner (2001)	Australia	Social difficulties Unclear: deals more broadly with anxiety	Cognitive behavioural	Trained teachers or psychologists delivered a brief 10 week intervention ‘Friends for Children’ to help children learn to cope and manage anxiety (e.g. relaxation techniques, cognitive re-structuring). Four workshops were also provided by parents to discuss the programme, parenting strategies and reinforcement strategies.	Design: RCT (cluster) Sample size: 489 Types of data: Quantitative to measure changes in anxiety (e.g. social phobia)	Age: 10 to 12 years Sex: Mixed (59% female) EBD: Strategy implemented with whole classes but effects examined for children with high baseline anxiety levels	No
Bishop (2000)	UK: England	Unclear – described as a strategy for children with EBD	Psycho-therapeutic	A ‘nurture group’ for a maximum number of eight pupils, staffed by one teacher and a classroom assistant. Children spent half their school time in the group. The teacher aimed to establish nurturing relationships for growth and development.	Design: Post-test only Sample size: 12 (2 children) Types of data: Qualitative to describe views on the strategy.	Age: Not stated Sex: Not stated EBD: Both children had been members of the ‘nurture group’.	No
Bock (1999)	USA	Aggressive Social difficulties	Cognitive behavioural	A ‘SOAP’ strategy was developed and implemented through a collaboration between a foster parent (mother); special education teacher; regular teacher; and a psychologist to enable a child who had experienced abuse to attend a regular classroom.	Design: Unclear, descriptive case-study Sample size: 1 Types of data: Qualitative description of the child’s progress	Age: Not stated Sex: Male only EBD: The child had problems controlling and aggression and was socially withdrawn.	No

APPENDIX 3.1: Details of studies included in the systematic map (cont'd)

Study ID	Country	Problem behaviour targeted by strategy	Theoretical model underlying strategy	Brief details of strategy	Evaluation details	Characteristics of children	Evaluation of any support given to teachers?
Cavell (2000)	USA	Aggressive	Psycho-therapeutic	'Prime Time' interventions (therapeutic mentoring, training in problem-solving skills, consultation with parents) was compared with standard mentoring for reducing aggression amongst children identified as aggressive by their teachers	Design: RCT Sample size: 62 Types of data: Quantitative (e.g. regression analyses predicting changes in aggression from social cognition scores and mentor relationship quality)	Age: 7 to 8 years Sex: Mixed (75% boys) EBD: Teachers identified 2-3 aggressive children in their classroom.	No
College of Family and Consumer Sciences (1999)	USA	Aggressive Disruptive Off-task Social difficulties	Cognitive behavioural Systemic	Outreach assistance to programmes providing services to children with severe social, emotional and behavioural difficulties, including those in fully inclusive general education classrooms. It aimed to increase the understanding, skill and effectiveness of educators and education agencies.	Design: Pre- and post-test only Sample size: 423 Types of data: Quantitative (e.g. observational ratings of service provider efficiency). Qualitative (e.g. interviews with programme co-ordinators)	Age: 3 to 16 years Sex: Mixed, no further details EBD: Children with severe social, emotional and behavioural 'disabilities', including autism	Yes Incorporated training teachers
Condon and Tobin (2001)	USA	Disruptive Off-task	Behavioural	Presents two case examples to demonstrate how teachers can use functional behavioural assessment to design behaviour support plans	Design: Pre- and post-test only Sample size: 2 Types of data: Quantitative measures of decrease in problem behaviours, and qualitative description of progress	Age: 6 to 8 years Sex: Male only EBD: First child displayed challenging behaviours (off task, inappropriate physical contact). Second child was argumentative and 'extremely hyperactive'.	No
Coniglio (2000)	USA	Aggressive Disruptive Off-task	Cognitive behavioural	Study investigated the effects of choice on on-task and disruptive behaviour and academic efficiency, in three elementary schoolchildren at risk for emotional disturbance.	Design: Other (ABAB) Sample size: 3 Types of data: Quantitative measures of inappropriate behaviour and academic efficiency	Age: 8 to 10 years Sex: Male only EBD: At risk for ED, aggressive, low-achieving (teacher ratings)	No

APPENDIX 3.1: Details of studies included in the systematic map (cont'd)

Study ID	Country	Problem behaviour targeted by strategy	Theoretical model underlying strategy	Brief details of strategy	Evaluation details	Characteristics of children	Evaluation of any support given to teachers?
Cooper <i>et al.</i> (2001)*	UK: England	Disruptive Off-task Social difficulties	Psycho-therapeutic	'Nurture groups' to support positive emotional and social growth and cognitive development. Between 10 and 12 children made up the groups and attended for 4.5 days per week. The groups were staffed by a teacher and a learning support assistant. The longest period of time that any child had spent in a 'nurture group' was one year.	Design: Control trial with matched comparison groups Sample size: 342 Types of data: Quantitative to assess impact of strategy on outcomes and qualitative to assess teacher and pupil views	Age: 4 to 10 years Sex: Not stated, apparently mixed EBD: Children exhibiting emotions & behaviours developmentally appropriate to a younger chronological age	No
Davies and Witte (2000)	USA	Off task	Cognitive behavioural	Third grade pupils were trained to use self-management and peer-monitoring strategies.	Design: Reversal Sample size: 30 including 4 ADHD and 4 matched controls Types of data: Quantitative measures of uncontrolled verbalizations	Age: 8 to 10 years Sex: Mixed (2 male, 2 female) EBD: Diagnosed with ADHD	No
Davis <i>et al.</i> (2000)	USA	Aggressive Disruptive Off-task Social difficulties	Behavioural	The study compared the effects of two interventions on the success of classroom transitions of two six-year-olds with behaviour problems in inclusive classrooms.	Design: Pre-and post-test only Sample size: 1 Types of data: Quantitative, observational measures of behaviour, showing percentage increases in successful transitions	Age: 6 years Sex: Male EBD: Challenging behaviour during transitions	No
De Martini-Scully <i>et al.</i> (2000)	USA	Disruptive	Behavioural	A packaged intervention, delivered by teachers, designed to reduce disruptive behaviours in two eight-year-old girls. The intervention included precision requests, antecedent strategies, and the reductive technique of response costs.	Design: Reversal Sample size: 3 Types of data: Quantitative measures of percentage change in disruptive behaviour	Age: 8 years Sex: Female only EBD: Inappropriate classroom behaviour (teacher reports)	Yes Trained teachers to issue commands and deliver consequences to promote pupil compliance

APPENDIX 3.1: Details of studies included in the systematic map (cont'd)

Study ID	Country	Problem behaviour targeted by strategy	Theoretical model underlying strategy	Brief details of strategy	Evaluation details	Characteristics of children	Evaluation of any support given to teachers?
Doyle (2001)	UK: England	Aggressive Disruptive Off-task Social difficulties	Psycho-therapeutic	This paper describes the evolution of the 'nurture group' Reintegration Readiness Scale, which helps to identify needs of children with emotional and behavioural disorders. Includes two case studies.	Design: Post-test only Sample size: 2 Types of data: Quantitative, scores on Reintegration Readiness scale. Qualitative description of children's progress.	Age: 4 to 7 (Infant school) Sex: Male only EBD: Child 1: low self-esteem, unco-operative, timid. Child 2: angry, non-conformist, inattentive	Yes Scale useful for staff development and teaching activities
Epstein <i>et al.</i> (2001)	USA	Off-task Social difficulties	Behavioural	A 10-year-old with ADHD was provided with computer software and a paging device with word-prompting capabilities to prompt him to initiate and complete daily tasks at home and in school.	Design: Reversal (ABABAB) Sample size: 1 Types of data: Quantitative. Rating scale to measure child's ability to function in classroom and home environments	Age: 10 years Sex: Male EBD: Diagnosed with ADHD, predominantly inattentive type	No
Gumpel and Frank (1999)	Israel	Social difficulties	Cognitive behavioural	A cross-age peer-tutoring programme to improve the social skills of socially rejected and isolated boys in kindergarten and sixth grade. Peer-tutoring consisted of the older boys conducting social skills training with their younger tutees.	Design: Reversal Sample size: 4 Types of data: Quantitative. Observation of behaviour using momentary time-sampling system	Age: 5 to 12 years (two 5-yr-olds, one 11-year old, one 12-year old) Sex: Male only EBD: Social isolation and peer rejection	No
Higgins <i>et al.</i> (2001)	USA	Disruptive Off-task	Behavioural	A token reinforcement programme to reduce inappropriate behaviours. Includes a practical evaluation of the token programme.	Design: Multiple baseline design, or 'time series' Sample size: 1 Types of data: Quantitative. Observation of number of inappropriate behaviour	Age: 10 years Sex: Male only EBD: High rates of multiple disruptive behaviours (teacher reports)	No
Hudley (1999)	USA	Aggressive	Cognitive behavioural	An after-school youth development programme incorporating a specific curriculum of aggression reduction.	Design: RCT Sample size: 90 (50 treatment & 40 comparison group) Types of data: Quantitative. Series of two-way ANOVAs examining effects of the after-school programme	Age: 7 to 11 years Sex: Mixed (43 boys, 47 girls) EBD: Aggression (teacher and parent ratings, Social Skills Rating System)	

APPENDIX 3.1: Details of studies included in the systematic map (cont'd)

Study ID	Country	Problem behaviour targeted by strategy	Theoretical model underlying strategy	Brief details of strategy	Evaluation details	Characteristics of children	Evaluation of any support given to teachers?
Hundert <i>et al.</i> (1999)	Canada	Aggressive Social difficulties	Other	Class-wide social skills training, partner reading and a combination of both, to reduce 'maladjustment'	Design: RCT Sample size: All children in primary division of 60 schools in Ontario. 1439 children in follow-up. Types of data: Quantitative baseline/follow-up ratings of problem behaviour	Age: 5 to 10 (primary, exact ages not specified) Sex: Mixed EBD: 'maladjustment'	No
Hutchinson <i>et al.</i> (2000)	Unclear but probably USA	Off-task	Behavioural Cognitive behavioural	Teaching children to use a self-management strategy consisting of self-recording with points, teacher praise, and encouragement	Design: Reversal Sample size: 1 Types of data: Quantitative. Baseline/intervention measures of task latency	Age: 6 years Sex: Male EBD: Hyperactive, 'generally being off-task'	No
Ialongo <i>et al.</i> (2001)	USA	Aggressive Disruptive Off-task Social difficulties	Behavioural Cognitive behavioural Other	First-graders with behaviour disorders received either a classroom-centred intervention designed to enhance teachers' behaviour management, or family-school partnerships intervention that targeted improvement in parent-teacher communication and parents' behaviour management strategies.	Design: RCT Sample size: 678 Types of data: Quantitative, Teacher observation ratings, structured interviews, using mixed ANOVA to examine impact of interventions after adjustment for baseline levels of early risk behaviours, and gender effects	Age: Average age 6 years, followed up at 12 years Sex: Mixed (53% boys) EBD: 'Conduct problems and disorder and mental health service need'	No
Kamps <i>et al.</i> (1999)	USA	Aggressive Disruptive Off-task Social difficulties	Behavioural Cognitive behavioural	A prevention programme designed to provide 'universal' interventions (i.e. classroom management, social skills, peer-tutoring in reading) for at-risk children and those identified as having EBD in urban schools	Design: Controlled trial (non-randomized) Sample size: 38 in two cohorts (20 and 18) Types of data: Quantitative. Direct observation of appropriate and inappropriate behaviour, and teacher Behaviour Report	Age: 5 to 9 years at onset of investigation, 8 to 13 during final probes. Sex: Mixed (35 boys, 3 girls) EBD: Selected according to scores on Systematic Screening for Behaviour Disorders (SSBD)	No

APPENDIX 3.1: Details of studies included in the systematic map (cont'd)

Study ID	Country	Problem behaviour targeted by strategy	Theoretical model underlying strategy	Brief details of strategy	Evaluation details	Characteristics of children	Evaluation of any support given to teachers?
Kamps <i>et al.</i> (2000a)	USA	Aggressive Disruptive Off-task Social difficulties	Cognitive behavioural Systemic	A prevention programme consisting of social skills activities, peer-tutoring, and individual and class-wide behavioural management components for improving the behaviours of 38 children with emotional disturbances	Design: Controlled trial (non-randomized) Sample size: 38 Types of data: Quantitative. Direct observations of compliance and aggression, teacher ratings of classroom behaviours	Age: 6 to 13 (Grades 1-7) Sex: Mixed (47 boys, 5 girls) EBD: Selection based on SSBD protocol with some modifications	No
Kamps <i>et al.</i> (2000b)	USA	Aggressive Disruptive Off-task	Cognitive behavioural	Prevention programme for Head Start kindergarten and first-grade children with behaviour problems	Design: Controlled trial (non-randomized) Sample size: 49 (31 in target group, 18 in comparison group) Types of data: Quantitative. Direct observation of classroom behaviour and peer interactions; teacher ratings	Age: Sex: Mixed (22 females, 27 males) EBD: Modified SSBD procedure and teacher ratings of children with behavioural concerns/aggressiveness	No
Kariuki and Martin (1999)	USA	Social difficulties	Behavioural	The intervention included a behaviour contract signed by pupils listing inappropriate target behaviours, and charting of behaviour violations by the classroom teacher, together with positive rewards for appropriate behaviour.	Design: Pre-and post-test Sample size: 20 Types of data: Quantitative. Paired samples t-test to measure pre- to post-test change in individuals, independent t-test to compare males/females	Age: Second grade (about 7 years) Sex: Mixed (7 females, 13 males) EBD: Inappropriate behaviour in classroom	No
Kelshaw-Levering <i>et al.</i> (2000)	USA	Disruptive Off-task	Behavioural	The study examined the effects of randomising components of an interdependent group contingency procedure, delivered by teachers, on the target behaviour of 12 second-grade pupils.	Design: Multiphase time-series (A-B-A-C-B-C) Sample size: 12 Types of data: Quantitative. Observations of disruptive behaviour at baseline and each stage of intervention	Age: 7 years approx. (second grade). Sex: Mixed (7 boys, 5 girls) EBD: Four disruptive pupil behaviours: off-task, inappropriate vocalizations, out-of-area and non-compliance.	No

APPENDIX 3.1: Details of studies included in the systematic map (cont'd)

Study ID	Country	Problem behaviour targeted by strategy	Theoretical model underlying strategy	Brief details of strategy	Evaluation details	Characteristics of children	Evaluation of any support given to teachers?
Kennedy <i>et al.</i> (2001)	USA	Aggressive Disruptive Off-ask	Behavioural Other	A positive behaviour plan was developed for each target pupil and delivered by general and/or special education teachers.	Design: Reversal Sample size: 3 Types of data: Quantitative and qualitative. Direct observation, interviews with teachers and case conferences on individual children to assess progress	Age: 6 (2 children) and 8 (1 child) Sex: Mixed (2 boys, 1 girl) EBD: Aggression, non-compliance and inappropriate vocalizations	No
Lane (1999)	USA	Unclear (Authors refer to problem behaviour and social skills)	Cognitive behavioural	The study investigated whether an academic or social skills intervention would be more effective in increasing academic performance and social competence and in decreasing problem behaviour in first-graders.	Design: RCT Sample size: 53 Types of data: Quantitative measures of social and academic skills	Age: 6.2 to 7.8 years Sex: Mixed (approx. 60% boys, 40% girls) EBD: Identified as at risk for antisocial behaviour on modified SSBD scale	No
Lane (2001)	USA	Aggressive Disruptive Off-ask	Cognitive behavioural	A phonological awareness programme was administered to first-graders at risk for conduct and attention problems. The strategy included teaching word attack skills and oral reading fluency.	Design: Pre- and post- test Sample size: 7 Types of data: Quantitative measures of reading and social skills, and direct observation of classroom behaviour	Age: 6 to 7 years Sex: Mixed (boys, 2 girls) EBD: Identified as at risk for antisocial behaviour on modified SSBD scale, and poor reading skills	No
Lee (2002)	Korea	Disruptive Off-ask Social difficulties	Behavioural	Two American teachers in a Korean school used their expertise with song and dance to teach social skills to an inclusive group of kindergarteners.	Design: Reversal Sample size: 10 (3 target, 7 others in group) Types of data: Quantitative Observations to record frequency of appropriate and inappropriate behaviours	Age: 5 to 6 years Sex: Male only EBD: 'Social isolation, mainly caused by maladaptive behaviours'	No
Leonardi <i>et al.</i> (2001)	USA	Aggressive Disruptive Social difficulties	Cognitive behavioural	A pro-social skills programme, 'Skillstreaming'. The programme has three components: anger management, moral reasoning and social skills.	Design: Post-test only Sample size: 8 Types of data: Qualitative observations of behaviour change, described anecdotally	Age: 7 to 12 years Sex: Mixed. 5 boys, 3 girls. EBD: Selected from 'the most difficult children in the school'	No

APPENDIX 3.1: Details of studies included in the systematic map (cont'd)

Study ID	Country	Problem behaviour targeted by strategy	Theoretical model underlying strategy	Brief details of strategy	Evaluation details	Characteristics of children	Evaluation of any support given to teachers?
Lupton and Sheppard (2000)*	UK: England	Aggressive Disruptive Off-task Social difficulties	Cognitive behavioural Systemic	The 'Parents and Schools Behaviour Action for Children (PASBAC)', a preventative intervention for primary schoolchildren at risk of behavioural difficulties. It took a multi-systemic approach to intervention, targeting the home, the school and the individual child, modelled on the American FAST track programme.	Design: Initially an RCT Sample size: 20 children Types of data: Quantitative to assess impact on outcomes and qualitative to assess stakeholder views	Age: Mean age of 7 years Sex: Male/female ratio of 6:1 EBD: Inattention, failure to concentrate, failure to control anger, aggression or inability to form positive relationships	No
McConaughy <i>et al.</i> (1999)	USA	Aggressive Disruptive Off-task Social difficulties	Systemic	The Achieving, Behaving, Caring Project for Preventing, namely a school-based early intervention program for children identified as at risk for EBD, involving parent-teacher collaborations	Design: RCT Sample size: 82 Types of data: Quantitative. Teacher and parent ratings, independent observations and MANOVA to test differences over time between intervention & control groups	Age: 6 to 8 years approx. (1 st & 2 nd grade) Sex: Mixed (56 boys, 26 girls) EBD: Children rated by teachers on SSBD for externalizing (disruptive/aggressive) or internalizing (affective/emotional) behaviours	No
McMahon <i>et al.</i> (2000)	USA	Unclear	Cognitive behavioural	A violence prevention programme for young, at-risk children	Design: Pre- and post-test only Sample size: 109 Types of data: Quantitative. Structured child assessment interviews, teacher ratings of social skills and behavioural observations of disruptive/aggressive behaviour, pre- and post-intervention	Age: 3-7 years Sex: Mixed (approx. 60% male, 40% female) EBD: Children 'at risk' of developing aggressive behaviour.	No
Moore <i>et al.</i> (2001)	New Zealand	Off-task	Cognitive behavioural	A self-management intervention involving self-recording and goal setting during language lessons	Design: Pre-and post-test, multiple baseline-across-participants Sample size: 3 Types of data: Quantitative. Children's self-recording and observer ratings of on-task behaviour	Age: 8 years. Sex: Male only. EBD: 'Unacceptable amounts of time off-task'.	No

APPENDIX 3.1: Details of studies included in the systematic map (cont'd)

Study ID	Country	Problem behaviour targeted by strategy	Theoretical model underlying strategy	Brief details of strategy	Evaluation details	Characteristics of children	Evaluation of any support given to teachers?
Munoz (2001)	USA	Aggressive Disruptive	Other	The Positive Outreach Program focuses on creating and enhancing positive skills, relationships and environmental contexts. It includes school, home and community-based interventions.	Design: Pre-and post test only Sample size: 184 Types of data: Mainly quantitative, teacher-based behaviour ratings analysed to show statistical trends. Qualitative: individual pupil files	Age: Approx. 5 to 11 years (kindergarten to 5 th grade) Sex: Mixed, but mostly male EBD: Referred by headteachers as having emotional, behavioural or social problems	No
Nelson <i>et al.</i> (2002)	USA	Aggressive Disruptive Off-task	Cognitive behavioural Systemic	A comprehensive school-wide programme based on an effective behavioural support approach for preventing disruptive behaviours. The programme consists of a school-wide discipline programme; one-to-one tutoring in reading; conflict resolution; a video-based family management programme, and an individualized behaviour intervention plan.	Design: Pre-and post-test only Sample size: 492 in seven elementary schools Types of data: Quantitative pre-and post-test measures of school climate, academic achievement, social competence, behaviour and consumer satisfaction	Age: Approx. 5 to 11 years (1 st –5 th grade) Sex: Mixed EBD: Pupils ranked highly on dimensions (e.g. aggressive, argumentative, defiant, out of seat, non-compliant, hyperactive)	No
O'Connor and Colwell (2002)	UK: England	Disruptive Off-task Social difficulties	Psycho-therapeutic	'Nurture groups'	Design: Pre- and post-test only Sample size: 68 Types of data: Quantitative. One-tailed related t-tests to test for predicted improvements in behaviour	Age: Mean age 5.25 years Sex: Mixed (46 boys, 22 girls) EBD: Children assessed on Diagnostic Developmental Profile with emotional and behavioural difficulties	No
Rasmussen and Lund (2002)	USA	Unclear	Cognitive behavioural	Empowering Children To Change, a behaviour support programme for pupils with EBD in elementary schools. The programme uses a five-step plan of escalating levels of support including classroom support, counselling and coaching.	Design: Post-test only Sample size: 56 Types of data: Quantitative, showing average monthly increases in academic and social behaviours	Age: Approx. 5 to 11 years (kindergarten to 5 th grade) Sex: Mixed EBD: Teacher referred pupils with emotional or behavioural problems	No

APPENDIX 3.1: Details of studies included in the systematic map (cont'd)

Study ID	Country	Problem behaviour targeted by strategy	Theoretical model underlying strategy	Brief details of strategy	Evaluation details	Characteristics of children	Evaluation of any support given to teachers?
Rasmussen and Lund (2002)	USA	Unclear	Cognitive behavioural	Empowering Children To Change, a behaviour support programme for pupils with EBD in elementary schools. The programme uses a five-step plan of escalating levels of support including classroom support, counselling and coaching.	Design: Post-test only Sample size: 56 Types of data: Quantitative, showing average monthly increases in academic and social behaviours	Age: Approx. 5 to 11 years (kindergarten to 5 th grade) Sex: Mixed EBD: Teacher referred pupils with emotional or behavioural problems	No
Rock and Zigmond (2001)	USA	Unclear	Other	Instructional Support Teams (ISTs) with children referred for intervention assistance due to academic and/or behavioural difficulties	Design: Post-test only Sample size: 140 Types of data: Quantitative, showing those promoted, retained in grade or referred for special education	Age: Approx. 5 to 11 years (kindergarten to 5 th grade) Sex: Mixed EBD: Academic failure and/or behavioural challenges and/or life-skills difficulties	No
Ryan (2000)	USA	Unclear	Cognitive behavioural	The Achieving, Behaving, Caring Project had three main elements: social skills instruction taught by classroom teachers; liaison between parents and teachers of individual children; and the Parent Teacher Action Research model for developing consonance between home and school.	Design: RCT Sample size: 82 (18 matched pairs in Cohort 1 and 23 matched pairs in Cohort 2) Types of data: Quantitative and qualitative: journals, anecdotes, school work, standardized test scores (e.g. social skills ratings; child behaviour checklist)	Age: Approx. 5 to 8 years (1 st and 2 nd grade) Sex: Mixed (56 boys, 26 girls) EBD: Children rated on SSBD for externalising (disruptive/aggressive) or internalising (affective/emotional) behaviours	No
Sage (2001)*	UK: England	Social difficulties Unclear	Cognitive behavioural	The Communication Opportunity Group Scheme (COGS) taught communication skills to improve literacy and behaviour. Children typically performed a short poem, gave a talk on something that interests them, and answered questions from the audience or produced a piece of personal reflective writing. Guided practice and corrective and supportive feedback was given by teachers.	Design: RCT Sample size: 36 Types of data: Quantitative communication and reading tests to assess impact of strategy on outcomes and qualitative interviews to assess parent and pupil views	Age: 7 to 15 years Sex: Mixed (11 girls and 25 boys) EBD: Inappropriate behaviour and limited social interaction; comprehension and expressive language difficulties	No

APPENDIX 3.1: Details of studies included in the systematic map (cont'd)

Study ID	Country	Problem behaviour targeted by strategy	Theoretical model underlying strategy	Brief details of strategy	Evaluation details	Characteristics of children	Evaluation of any support given to teachers?
Schirduan and Case (2001)	USA	Off task	Other	A curriculum based on Multiple Intelligences Theory	Design: Post-test only Sample size: 87, in regular classrooms Types of data: Quantitative measures to examine relationship between teacher perception, intellectual status and pupil self-concept; qualitative interviews with teachers, pupils, parents, principal; case narratives	Age: Approx. 7 to 13 years (grades 2-7) Sex: Mixed EBD: Children identified with ADHD	No
Schmid (1999)	USA	Aggressive Disruptive Off-task	Behavioural Other	A pre-referral assessment and intervention procedure implemented by teachers in one elementary school	Design: Initial assessment followed by daily programme ratings and log of attainment of specific goals Sample size: 1 (single case study) Types of data: Quantitative. Teacher ratings, daily reports, programme log	Age: Strategy applicable to approx. 5 to 11 years (kindergarten to 5 th grade). Case study: 3 rd grade. Sex: Male EBD: Consistent and intense disruptive and, defiant behaviour	No
Semrud-Clikeman <i>et al.</i> (1999)	USA	Off-task	Other	Intervention includes attention and problem-solving training, which compared children with or without ADHD.	Design: Controlled trial (non-randomized) Sample size: 51 (21 ADHD, 12 ADHD control group, 21 non-ADHD control group) Types of data: Quantitative measures of improvements in visual and auditory attention	Age: Mean age of 10 years Sex: Mixed (25 boys, 8 girls) EBD: Children identified with ADHD	No

APPENDIX 3.1: Details of studies included in the systematic map (cont'd)

Study ID	Country	Problem behaviour targeted by strategy	Theoretical model underlying strategy	Brief details of strategy	Evaluation details	Characteristics of children	Evaluation of any support given to teachers?
Shapiro <i>et al.</i> (1999)	USA	Unclear	Systemic	An experiential in-service programme and consultation processes facilitating the inclusion of pupils with EBD into general education settings.	Design: RCT Sample size: Teachers in 25 school districts, and 44 pupils within these districts Types of data: Quantitative and qualitative, including measures of teachers' knowledge and skills acquisition and perceptions of strategy effectiveness and acceptability. Observations of strategy implementation. Interviews assessing attitude change. Follow-up statistics on pupil inclusion.	Age: Adults, and some pupils aged 7-17 years. Sex: Mixed pupils (40 boys, 4 girls) EBD: Pupils with EBD at risk of exclusion or new inclusions	Yes. Main focus on in-service training to facilitate the inclusion of pupils with EBD into general education settings.
Spalding (2000)*	UK: England	Aggressive Social difficulties	Psycho-therapeutic	A room in the school to which children with EBD can go to receive various treatments from trained therapists (e.g. neuro-linguistic programming; stress management, massage) known as the 'quiet place'. The room is designed to promote a sense of peace and relaxation. Children are timetabled to attend for a number of sessions per week, and the period of attendance is usually six weeks. Parents are also invited into the room.	Design: Controlled trial with a matched comparison group Sample size: 44 children and 16 parents Types of data: Quantitative to assess impact of strategy on outcomes and qualitative to assess parent and teacher views	Age: 4 to 11 years (primary school, specific ages not specified) Sex: Mixed EBD: Children referred to the 'quiet place' on the basis of emotional need	No

APPENDIX 3.1: Details of studies included in the systematic map (cont'd)

Study ID	Country	Problem behaviour targeted by strategy	Theoretical model underlying strategy	Brief details of strategy	Evaluation details	Characteristics of children	Evaluation of any support given to teachers?
St James-Roberts and Singh (2001)*	UK: England	Aggressive Disruptive Off-task Social difficulties	Cognitive behavioural Psycho-therapeutic	Children with behaviour problems were referred by the teachers to Project CHANCE, a community based mentoring scheme. Adult mentors aimed to develop a trusting and supportive relationship with their mentee and used 'solution focused interventions' to change their child's problem behaviour. This involved teaching their child life skills to encourage independence, active learning and a sense of mastery.	Design: Controlled trial with matched comparison group Sample size: 50 Types of data: Quantitative to examine effects of strategy on outcomes and qualitative to assess stakeholders views on strategy	Age: Mean age of 8 years Sex: Mixed (although 78% boys) EBD: All scored above the UK 80 th percentile on behavioural difficulties and 35 were on the Special Educational Needs Register.	No
Strayhorn and Bickel (2002)	USA	Disruptive Off-task Social difficulties	Other	Compared individual tutoring to classroom instruction for children with ADHD	Design: RCT Sample size: 30 Types of data: Quantitative. Behaviour ratings to compare impact of classroom and tutoring conditions and gender differences	Age: Mean age of 7.5 years pre-intervention and 8.6 years post-intervention Sex: Mixed (19 boys, 11 girls) EBD: Teacher ratings; children 'fitted the pattern required by the DSM-IV for a diagnosis of ADHD'.	No
Vitaro <i>et al.</i> (1999)	Canada	Aggressive Disruptive	Cognitive behavioural	A preventive intervention programme aimed at improving social-cognitive skills at school and parental management skills at home for disruptive boys	Design: RCT Sample size: 149 in 53 schools Types of data: Quantitative, using regression analysis to examine effects of participation in intervention programme on children's post-intervention disruptiveness and type of school placement	Age: Mean age of 6 years Sex: Male only EBD: Teachers rated the boys' behaviour on the disruptiveness scale of the Social Behaviour Questionnaire (disruptive, hyperactive, irritable, disobedient, etc.).	No

APPENDIX 3.1: Details of studies included in the systematic map (cont'd)

Study ID	Country	Problem behaviour targeted by strategy	Theoretical model underlying strategy	Brief details of strategy	Evaluation details	Characteristics of children	Evaluation of any support given to teachers?
Wiley and Rios (1999)	USA	Disruptive Off-task	Behavioural Cognitive behavioural	A collaborative problem-solving process between teacher and school psychologist, aimed at pupils with low reading ability and behavioural problems	Design: Post-test only Sample size: One Types of data: Quantitative. Basic statistics to show change in reading ability, on-task behaviour and disruptive behaviour	Age: 7 years, 11 months Sex: Male EBD: Low reading ability and attention problems	No
Zanolli (1999)	USA	Aggressive Disruptive	Behavioural	Rapidly Alternating Multiple Schedules (RAMS) to identify 'naturally-occurring reinforcers' (e.g. adult attention) which can then be used to treat aggressive and disruptive behaviours	Design: Reversal Sample size: Four Types of data: Quantitative. Observer ratings of frequency of disruptive and aggressive behaviours in RAMS and non-RAMS sessions	Age: 2 to 11 years Sex: Mixed (three boys, one girl) EBD: Aggressive, destructive, emotionally disturbed (one child autistic)	No

APPENDIX 4.1: Studies evaluating support for teachers

Four studies specifically evaluated support for teachers in implementing strategies.

De Martini-Scully et al. (2000) examined the effects of a packaged intervention designed to reduce disruptive behaviour in two eight-year-old female pupils. This study involved a teacher training component in which researchers trained class teachers to effectively issue commands and deliver consequences in order to promote pupil compliance. It also included contingency contracts, 'mystery motivators' (e.g. a sealed envelope containing a potential reward), a token economy with a response cost, and public posting of classroom rules.

Doyle (2001) describes the evolution of the 'nurture group' Reintegration Readiness Scale, a scale that helps to identify the needs of pupils with emotional and behavioural disorders. Staff at an English primary school established a 'nurture group' in May 2000. As the school year progressed, they noted that there appeared to be no universally identified established method specifically to measure suitability for reintegration into mainstream classrooms. The teachers therefore created an assessment tool designed to help analyse each child's behaviour, to measure readiness to reintegrate, and to highlight specific areas requiring further development. The scale they constructed broke down the main areas of concern into five headings: self-control and management of behaviour; social skills; self-awareness and confidence; skills for learning; and approach to learning.

Shapiro et al. (1999) conducted a three-year project examining the impact of an in-service programme and consultation processes in facilitating the inclusion of pupils with emotional or behavioural disorders in 25 school districts in Pennsylvania, USA. Each school district selected a team comprising a general educator, special educator and support professional (e.g. school psychologist) to attend a two-and-a-half-day in-service training programme. During training, teams were instructed in four specific intervention strategies: self-management; social skills and problem-solving training; peer-tutoring; and co-operative learning. Teams had the opportunity actively to observe and participate in implementing these strategies. Lecture presentations, video demonstrations and discussion were also used. Following training, project staff provided support to teams for six to eight weeks, to help them design and implement their selected interventions in school. This support included direct consultation and advice, working alongside staff in classrooms, assisting in data-collection and analysis, and collecting outcome and follow-up measures.

One further study which focused on teacher education evaluated an outreach project for children aged three to 16 years with severe social, emotional and behavioural disabilities, including some in fully inclusive general education (**College of Family and Consumer Sciences, 1999**). The project adopted a model based on developmentally appropriate strategies to encourage social and emotional growth. Some of its goals were to increase the understanding of educators and families about exemplary teaching and behaviour management practices for facilitating social-emotional competence and responsible behaviour,

and to increase the skills of educators in selecting, implementing and demonstrating exemplary practices.

The project's outreach activities included various modes of in service training and professional development for teachers, such as workshops, conferences, distance learning, direct observations in classrooms, debriefings for feedback, and written feedback. It included on-going assistance provided by project instructors and regional associates who visited staff in schools.

APPENDIX 4.2: Methods used in the studies included in the in-depth review

Study	Evaluation design	Sample size	Sampling, recruitment and consent	Characteristics of children	Outcomes measured (tools) and timing	Attrition rate
Cooper et al. (2001)	<p>Number of groups: 3</p> <p>Basis of division into groups</p> <p>No prospective allocation, but use of pre-existing differences to create comparison groups</p> <p>Nature of groups</p> <p>Group 1 = Children with social and emotional difficulties (SEBD) attending a 'nurture group' from 25 schools</p> <p>Group 2 = Children with SEBD from different schools who did not attend a 'nurture group' and were taught entirely in a mainstream classroom. These children were matched with children in group 1 on age, gender, educational attainment and level of SEBD</p> <p>Group 3 = Children without SEBD taught in the mainstream classroom</p>	<p>Group 1 = 216</p> <p>Group 2 = 64</p> <p>Group 3 = 62</p>	<p>Sampling: 23 schools from 8 LEAs representing varying sizes and diverse geographical locations took part in the study and formed Group 1. It is not clear how these were selected. Not details on how children in group 2 and 3 were selected are given.</p> <p>Recruitment:: No details are provided</p> <p>Was consent sought? Not stated</p>	<p>Age: 4 to 10 years</p> <p>Sex: Not stated</p> <p>Socio-economic status: Not stated</p> <p>Ethnicity: Not stated</p>	<p>List of outcomes</p> <p>(1) Levels of social and emotional difficulties (Social Difficulties Questionnaire)</p> <p>(2) Levels of emotional and behavioural functioning (Boxhall Profile)</p> <p>(3) Parents of children attending 'nurture groups' interviewed for their views on impact</p> <p>Timing of outcome measurement:</p> <p>Outcomes (1) and (2) were measured before and concurrently with the intervention.</p>	Not stated
Lupton and Sheppard (2000)	<p>Number of groups: 3</p> <p>Basis of division into groups</p> <p>Prospective random allocation of children</p> <p>Nature of groups</p> <p>Group 1 = Weekly home visits from parent support workers</p> <p>Group 2 = Weekly parenting skills group</p> <p>Group 3 = Control group</p>	<p>20</p> <p>Break-down according to three groups not given as the original evaluation design was abandoned</p>	<p>Sampling: Five self-selecting primary schools. Of those children in these schools with special educational needs, those children who had emotional and behavioural difficulties were selected for the study.</p> <p>Recruitment: Before being referred to the project, parental acknowledgement that the child needed assessment was sought.</p> <p>Was consent sought? Not stated</p>	<p>Age: 5 to 10 years with an average age of 7 years</p> <p>Sex: Male/female ratio of 6:1</p> <p>Socio-economic status: Not stated, but school served an inner city housing estate</p> <p>Ethnicity: Not stated</p>	<p>List of outcomes</p> <p>(1) Parent and teacher perceptions of improvements in behaviour</p> <p>Timing of outcome measurement:</p> <p>After the intervention only</p>	Not stated

APPENDIX 4.2: Methods used in the studies included in the in-depth review (cont'd)

Study	Evaluation design	Sample size	Sampling, recruitment and consent	Characteristics of children in group(s)	Outcomes measured (tools) and timing	Attrition rate
Sage (2001)	<p>Number of groups: 3</p> <p>Basis of division into groups <i>Prospective random allocation of children</i></p> <p>Nature of groups <i>Group 1 = Intensive version of the 'COGS' intervention</i> <i>Group 2 = Brief version of the 'COGS' intervention</i> <i>Group 3 = Control group</i></p>	<p>Group 1 = 12</p> <p>Group 2 = 12</p> <p>Group 3 = 12</p>	<p>Sampling: Two schools were selected for this study (no details on how these were selected). Pupils meeting the following criteria were selected for study: appearance on special needs register; inappropriate behaviour in school and limited social interaction; and reports from teachers indicating comprehension and expressive language needs</p> <p>Recruitment: No details provided</p> <p>Was consent sought? Not stated</p>	<p>Age: 7 to 15 years</p> <p>Sex: 11 boys and 25 girls</p> <p>Socio-economic status: Not stated</p> <p>Ethnicity: Not stated</p>	<p>List of outcomes (1) Grammar skills (Test for Reception of Grammar) (2) Language and thinking skills (Sage Assessment of Language and Thinking) (3) Parental reports of improvements in behaviour of children receiving the intervention</p> <p>Timing of outcome measurement Outcomes (1) and (2) were measured before and after the intervention; parental reports was gathered after the intervention only.</p>	Not stated
Spalding (2000)	<p>Number of groups: 2</p> <p>Basis of division into groups <i>No prospective allocation, but use of pre-existing differences to create comparison groups</i></p> <p>Nature of groups <i>Group 1 = Children referred to the 'quiet place' in one school</i> <i>Group 2 = A group of children meeting the referral criteria in a neighbouring school with no 'quiet place' provision, matched to children in group 1 on age and socio-economic background</i></p>	<p>Group 1 = 22</p> <p>Group 2 = 22</p>	<p>Sampling: One school was selected for this study on the basis that this school was the first of several to receive funding to set up the intervention. The first 22 children to be referred to the 'quiet place' were selected as the sample for this study.</p> <p>Recruitment: No details provided</p> <p>Was consent sought? Not stated</p>	<p>Age: Not stated</p> <p>Sex: Not stated</p> <p>Socio-economic status: Not stated, although school located in an area of high social and economic deprivation</p> <p>Ethnicity: Not stated</p>	<p>List of outcomes (1) Levels of emotional and behavioural functioning (Boxhall Profile) (2) Teacher and parent perceptions of improvements in children's behaviour (of those attending the 'quiet place' only)</p> <p>Timing of outcome measurement Outcome (1) was measured before and after the intervention; teacher and parent perceptions assessed after the intervention only.</p>	Not stated

APPENDIX 4.2: Methods used in the studies included in the in-depth review (cont'd)

Study	Evaluation design	Sample size	Sampling, recruitment and consent	Characteristics of children in group(s)	Outcomes measured (tools) and timing	Attrition rate
St-James-Roberts and Singh (2001)	<p>Number of groups: 2</p> <p><i>Basis of division into groups</i> No prospective allocation, but use of pre-existing differences to create comparison groups</p> <p>Nature of groups Group 1 = Children from 'feeder' schools for Project CHANCE referred to a mentoring programme Group 2 = Children meeting referral criteria for Project CHANCE from 'non-feeder' schools (with similar characteristics as 'feeder schools'), matched to group 1 children on age, gender ethnicity and scores of the Social Difficulties Questionnaire (SDQ).</p>	<p>Group 1 = 25</p> <p>Group 2 = 25</p>	<p>Sampling: All children completing Project CHANCE</p> <p>Recruitment: No details provided.</p> <p>Was consent sought? Not stated</p>	<p>Age: range 6 to 10 years; mean age of 8.4 in Group 1 and 8.1 in Group 2</p> <p>Sex: 21 boys and 4 girls in Group 2; 18 boys and 7 girls in Group 2</p> <p>Socio-economic status: All children lived in socially and economically deprived areas; 82% were receiving free school meals.</p> <p>Ethnicity: 44% white in group 1; 40% white</p>	<p>List of outcomes (1) Levels of behaviour problems (Social Difficulties Questionnaire) (2) Number of school exclusions (3) Number of sessions absent from school (4) Mean reading age (5) Individual assessments of behaviour by teachers (6) Parent and teacher views on improvements in behaviour of the mentored children</p> <p>Timing of outcome measurement Outcomes 1 to 5 were measured before and after the intervention; parental and teacher views assessed after the intervention only.</p>	Not stated

APPENDIX 4.3: Quality and findings of the studies included in the in-depth review

Key for 'weight of evidence'

A: Taking account of all quality assessment issues (i.e. quality of reporting study methods and results and quality of actual methods), can the study findings be trusted in answering the study question(s)?

B: Appropriateness of research design and analysis for addressing the question, or sub-questions, of this specific systematic review

C: Relevance of particular focus of the study (including conceptual focus, context, sample and measures) for addressing the question or sub-questions of this specific systematic review

D: Taking into account A, B and C, what is the overall weight of evidence this study provides to answer the question of this specific systematic review?

Study	Country	Problem behaviour targeted by strategy	Theoretical model underlying strategy	Intervention details	Author's judgement about effect	Assessment of 'weight of evidence'*	Reviewer's judgement about effect
Cooper <i>et al.</i> (2001)	UK: England	Disruptive Off-task Social difficulties	Psycho-therapeutic	'Nurture groups' to support positive emotional and social growth and cognitive development. Between 10 and 12 children made up the groups and attended for 4.5 days per week. The groups were staffed by a teacher and a learning support assistant. The longest period of time that any pupil had spent in a 'nurture group' was one year.	Author concluded that 'nurture groups' were effective, although they emphasised the interim nature of report.	A: Medium B: High C: Medium D (Overall): Medium	Inconclusive (incomplete interim findings reported)
Lupton and Sheppard (2000)	UK: England	Aggressive Disruptive Off-task Social difficulties	Cognitive behavioural Systemic	The 'Parents and Schools Behaviour Action for Children (PASBAC)', a preventative intervention for primary schoolchildren at risk of behavioural difficulties. It took a multi-systemic approach to intervention, targeting the home, the school and the individual child, modelled on the American FAST track programme.	Authors conclude that PASBAC appeared to strengthen the home-school link and to have led to improvement in behaviour. They do note, however, that it was less successful for those already experiencing considerable difficulties and that any long-term benefits have yet to be demonstrated.	A: Low B: Low C: High D (Overall): Low	Unclear due to break down of original experimental design

Study	Country	Problem behaviour targeted by strategy	Theoretical model underlying strategy	Intervention details	Author's judgement about effect	Assessment of 'weight of evidence'*	Reviewer's judgement about effect
Sage (2001)	UK: England	Social difficulties Unclear <i>'Inappropriate social behaviour'</i>	Cognitive behavioural	The Communication Opportunity Group Scheme (COGS) taught communication skills to improve literacy and behaviour. Children typically performed a short poem, gave a talk on something that interests them, and answered questions from the audience or produced a piece of personal reflective writing. Guided practice and corrective and supportive feedback was given by teachers.	Author concluded that this intervention was effective for improving the behaviour of children	A: Low B: Medium C: Low D (Overall): Low	Unclear
Spalding (2000)	UK: England	Aggressive Social difficulties	Psycho-therapeutic	A room in the school to which children with EBD can go to receive various treatments from trained therapists (e.g. neuro-linguistic programming; stress management, massage) known as the 'quiet place'. The room is designed to promote a sense of peace and relaxation. Children are timetabled to attend for a number of sessions per week, and the period of attendance is usually six weeks. Parents are also invited into the room.	Although the improvements of children attending the 'quiet place' compared with the control group failed to reach levels of statistical significance, the author concluded there was little doubt that the intervention had a positive effect overall on emotional development.	A: Low B: Medium C: High D (Overall): Medium	Inconclusive (small size meant that study was underpowered to detect an effect of the intervention)

Study	Country	Problem behaviour targeted by strategy	Theoretical model underlying strategy	Intervention details	Author's judgement about effect	Assessment of 'weight of evidence'*	Reviewer's judgement about effect
St James-Roberts and Singh (2001)	UK: England	Aggressive Disruptive Off-task Social difficulties	Cognitive behavioural Psycho-therapeutic	Children with behaviour problems were referred by the teachers to Project CHANCE, a community-based mentoring scheme. Adult mentors aimed to develop a trusting and supportive relationship with their mentee and used 'solution-focused interventions' to change their child's problem behaviour. This involved teaching their child life skills to encourage independence, active learning and a sense of mastery.	Children in both the mentored group and comparison group showed improvements in their overall scores on the SDQ, and sub-scores (e.g. hyperactivity, pro-social behaviours). However children in the mentored group did not improve significantly more than the children in the comparison group. There were no differences at follow-up on any other outcome measure (number excluded from school, number of sessions absent from school, mean reading age, teacher's reports on children).	A: Medium B: Medium C: Medium D (Overall): Medium	Inconclusive (small size meant that study was underpowered to detect an effect of the intervention)