



REVIEW

September 2003

**A systematic review of the
impact of school
headteachers and principals
on student outcomes**

Review conducted by the School Leadership Review Group

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ACKNOWLEDGEMENTS

The Review Group has endeavoured to undertake the project described in this report in accordance with EPPI-Centre Guidelines. The study was conducted with funding from the DfES (via the EPPI-Centre) and with the support of the University of Leicester and the National College for School Leadership.

Our EPPI-Centre link person, James Thomas, has provided invaluable help and advice throughout the review. We wish to thank him and other EPPI-Centre staff members for their help with the review and for their work on formatting this publication. We are grateful to the National College for School Leadership for funding the participation of Professor Geoff Southworth and to Mrs Pat Carter of the Centre for Educational Leadership and Management, University of Leicester for her administrative support.

LIST OF ABBREVIATIONS

ESRC	Economic and Social Research Council
IMRS	Instructional Management Rating Scales
NCSL	National College for School Leadership
OECD	Organisation for Economic Co-operation and Development
OfSTED	Office for Standards in Education
SCRELM	Standing Conference on Research in Educational Leadership and Management
SES	Socio-economic status
SLRG	School Leadership Review Group
SPSS	Statistical Package for the Social Sciences

This report should be cited as: Bell L, Bolam R, Cubillo L (2003) A systematic review of the impact of school leadership and management on student outcomes. In: *Research Evidence in Education Library*. London: EPPI-Centre, Social Science Research Unit, Institute of Education.

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SUMMARY

Background

Since 1990, there has been a large measure of agreement by scholars and policy-makers about what should be the priorities of school leaders. Education reforms in many countries have resulted in substantial changes in the roles of headteachers and principals. School leadership and management, as vested in the senior staff in schools and especially the headteacher or principal, is regarded by policy-makers and practitioners alike as a key factor in ensuring a school's success. Thus, there is a widespread, strongly held belief that school leadership makes a difference and that headteachers should be supported and trained to raise educational standards.

However, this strong belief finds rather limited support in the research and scholarly literature where the nature, focus and effect of leaders' actions are either contested or unclear. This review sets out to identify the research evidence on which these beliefs rest.

Aims of the review and review questions

This review focuses on the broad area of school management and leadership and in particular on headteachers and principals. The aims of the review are:

- to identify studies of the effect of headteachers on student outcomes
- to conduct in-depth analysis of the effect of headteachers on student outcomes
- to make recommendations for practice, policy and future research

This review set out to answer one main question:

What is the effect of headteachers on student outcomes?

The subsidiary review questions are:

What is the effect of headteachers on four aspects of student outcomes: achievement, attitudes, behaviour and recruitment?

and

How do headteachers' leadership and management strategies contribute to these outcomes?

Methods

This school leadership review used tools, guidelines and procedures developed by the EPPI-Centre. In line with these, the review used systematic, replicable methods to identify potentially relevant studies through searching and screening; describe studies through keywording; undertake an in-depth review and quality

assessment of relevant studies; synthesise relevant studies and have quality assurance procedures in place.

Users had an important role in the review. They helped to formulate the question, advised on the results and were also involved in reviewing studies.

Results

Two of the eight included studies were descriptive and six were outcome evaluations. They were set in six different countries. The two descriptive studies were both British; one was set in a primary school and the other was the only one of the eight to include special schools. Of the four primary school outcome evaluations, one was from Hong Kong, one from Canada, one from the Netherlands and one from the US. One secondary school evaluation study was from the US and the other from Australia. Four studies were reported in books and four in journals.

All the eight studies reviewed provided some evidence that school leaders can have some effect on student outcomes, albeit indirectly. The more methodologically sophisticated studies demonstrated the pathways through which this effect was achieved. The evidence from one descriptive study was based on teachers' perceptions and the second on a single case study. The latter (McMahon, 2001) found that change of leadership can have a substantial negative effect. The evidence from three of the six outcome evaluation studies was more firmly based, while the remaining three provided weak but positive evidence.

One primary school study produced mixed findings about achievement: Van de Grift and Houtveen (1999) reported weak positive effect on three curriculum subjects; Leitner (1994) reported little or no effect on mathematics but significant effect on language and a small degree of effect on reading. One secondary school study (Wiley, 2001) found evidence of significant effect on mathematics test scores while the other (Silins and Mulford, 2002) also found evidence of indirect effect on student achievement.

Two primary school studies provided mixed evidence about leaders' effect on attitudes to learning. Leithwood and Jantzi (1999) reported no significant effect on student engagement, while Cheng (2002) found evidence of a moderate correlation between principals' leadership and attitudes to learning. One secondary school study (Silins and Mulford, 2002) reported indirect effect on non-academic student variables: participation in school, engagement with school and academic self-concept.

None of the studies collected specific data on recruitment or behaviour (i.e. student discipline). One descriptive study (Bolam *et al.*, 1993) did provide some positive evidence based on proxy measures, while the case study (McMahon, 2001) highlighted the negative effect of change of leadership. One secondary school study (Silins and Mulford, 2002) found evidence of indirect effect on student retention.

Conclusions

Effective leadership was confirmed as probably being an important factor in a school's success. The evidence relating to the effect of headteachers on student outcomes indicates that such an effect is largely indirect. It is mediated through key intermediate factors, these being the work of teachers, the organisation of the school, and relationship with parents and the wider community. It is widely recognised that leadership is not exclusively located in the headteacher or senior management of the school. Hence one tentative conclusion from these findings is to suggest that leadership that is distributed among the wider school staff might be more likely to have an effect on the positive achievement of student outcomes than that which is largely, or exclusively, 'top-down'.

1. BACKGROUND

The aims, rationale and conceptual framework for this review are presented in this chapter. There is also an outline of the interests of the authors, funders and other audiences for the review.

1.1 Aims and rationale for the review

This systematic review was undertaken against a background of extensive and complex education changes to English education policy, an increased emphasis on the role of headteachers in raising standards and a research tradition that offers limited insights into associated issues. This review set out to clarify these issues and act as a resource for headteachers, teachers, governors, parents, professional associations, trainers and policy-makers who wish to find out about the effect of school leadership and management on student outcomes.

The review has three aims:

- to identify studies of the effect of headteachers on student outcomes
- to conduct in-depth analysis of the effect of headteachers on student outcomes
- to make recommendations for practice, policy and future research

1.2 Definitional and conceptual issues

There is a widely held belief amongst policy-makers and practitioners that the quality of leadership in a school is an important factor in raising pupil achievement. However, this strong belief finds rather limited support in the research and scholarly literature where the nature, focus and effect of leaders' actions are either contested or unclear. This is exemplified by the fact that three terms - *administration*, *management* and *leadership* - have been used at various times to denote similar organisational processes. Scholars and researchers continue to debate the relationship between these three terms (Bolam, 1999), and, more frequently, between the aims and methods of educational leadership and of management (Fidler, 1997), the form or style of leadership (Bolman *et al.*, 1992; Day *et al.*, 2000; Leithwood and Jantzi, 1999; Southworth, 1999) and what leaders should pay attention to. In terms of the latter, for example, some studies suggest that school leaders should concentrate on organisational cultures (Hargreaves, 1994; Nias *et al.*, 1989), while others propose strategic planning and marketing (Davies and Ellison, 1998; Fidler, 1998). Nevertheless, 'leadership' is now the most commonly used term, usually interpreted in the following way:

'...I take 'educational leadership' to have at its core the responsibility for policy formulation and, where appropriate, organisational transformation; I take 'educational management' to refer to an executive function for carrying out agreed policy; finally, I assume that leaders normally also have some management responsibilities...' (Bolam, 1999, p 194)

The general literature in the field is characterised by its diversity of scope and emphases and by some intractable problems. It often falls into several fairly distinct types - produced by theorists, researchers, policy-makers, practitioners

and trainers. As a field of study it draws upon a range of sub-fields: sociology, social policy, philosophy, social psychology, occupational psychology, economics, management studies, education and training, as well as andragogy (Knowles *et al.*, 1998). The resultant publications are rarely mutually informing or cumulative, and are often contradictory. They are also often characterised by, and in turn contribute to, the problem of what has been called 'conceptual pluralism'.

Bush (1995) identifies six major theoretical models relevant to educational management: formal/bureaucratic, collegial, political, subjective, ambiguous and cultural, while Leithwood and Jantzi (1999) identify six theoretical approaches to school leadership: instructional, transformational, moral, participative, managerial/transactional and contingent. To complicate matters further, new theories and labels often appear. These include the *competence-based* model implicit in the National Standards for Headteachers (TTA, 1998), '*emotionally intelligent*' leadership (Day *et al.*, 2000, p. 178), *invitational leadership* (Stoll and Fink, 1996) and *distributed leadership* (Gronn, 2000). These models and theories are often only loosely based on empirical work in education. An apparent exception is one which proposes that school leaders are likely to exhibit six styles of leadership: coercive, authoritative, affiliative, democratic, pacesetter and coaching (Hay McBer, 1998 and 2000). Unfortunately, although commissioned by the Department for Education and Employment, the empirical work said to underpin this model is not in the public domain (Bassegy, 2001).

Thus, there are severe limitations to the present state of theoretical knowledge and the ways in which it informs research. Analogous tensions characterise the relationship between theory and practice and led Hoyle (1986) to distinguish between two types of theory - theory for understanding and theory for action - arguing that organisation and management theories are of the first type.

1.3 Policy and practice background

The performance and effectiveness of school leadership and management are regarded by policy-makers and practitioners alike as key factors in promoting a school's success. Some studies of effective schools have found correlations between purposeful leadership by the headteacher and a school's high performance (Mortimore *et al.*, 1988; Sammons *et al.*, 1995). This finding was supported in England by inspection reports of the Office for Standards in Education (OfSTED, 1999). These reports, in turn, played a part in guiding the development by the British government of national training programmes for aspiring, newly appointed and experienced, English headteachers. There is some evidence that policymakers also adhere to this belief in the crucial role of headteachers and other school leaders in determining a school's success and that as a consequence headteachers should be supported and trained in leadership skills as a way to raise educational standards. For example, the British Secretary of State for Education established an English National College for School Leadership (NCSL) in 2000. The NCSL was given the role of supporting headteachers and other school leaders and with managing their training and professional development.

Since 1990, there has been some convergence of opinion amongst policy-makers and scholars about the practical focus and priorities of school leaders. There is broad international agreement and evidence that education reforms in many countries have resulted in substantial changes in the roles of headteachers and principals. For example, the report of a survey by the Organisation for

Economic Co-operation and Development (OECD) of school management in nine countries - Belgium, Greece, Hungary, Japan, Mexico, Netherlands, Sweden, the UK and the USA - states that

'schools everywhere are being asked to do more than ever before. They face a complex world and a seemingly endless set of pressures. Those who manage schools must take responsibility for an arduous task. (This can lead to a ...sense of crisis and despair that can easily affect educational management ... yet ...school systems and individual schools are experimenting with management' (CERI, 2001, p 13)

Compared with most OECD countries, the approach in England and Wales was noteworthy for the scale and scope of the post-1988 reform programme, which covered all 27,000 schools and resulted in extensive and radical changes in the roles and responsibilities of headteachers and other senior staff. From 1988, headteachers in England and Welsh state schools were required to have strategic leadership, planning, marketing, evaluation and development skills; to focus much more directly than hitherto on student learning and assessment targets; to operate as quasi chief executives in relation to school governors; to deal with and respond to external inspections and to co-operate, as well as compete, with neighbouring schools.

1.4 Research background

Issues about the changing role of school leaders have been the focus of various research projects (Wallace and Weindling, 1999). For example, a unique, ten-year, longitudinal study (Weindling, 1999) offered insights into the cumulative effect of the reform of school management on a cohort of British secondary headteachers. In 1987, 80 percent of the sample said their role was very different from when they had started the job in 1982 and, in 1993, 90 percent said their role had continued to change significantly over the previous five years. The main areas of difference concerned the introduction of local management of schools, which had pushed finance-related issues up their list of concerns, together with the other mandated changes. A European survey found that Welsh headteachers were much more likely than their counterparts in the Netherlands, Norway and Spain to see government reforms as causing them substantial problems (Dunning, 2000).

Searching for studies for this review revealed that the majority of those that address educational leadership and management in the UK and other countries focus on headteachers and principals (e.g. Beck and Murphy, 1996; Coleman, 2001; Day *et al.*, 2000; Hall *et al.*, 1986; Hall and Southworth, 1997; Southworth, 1995). There appear to have been fewer studies of deputy heads and middle managers. In part, this may be due to the lingering view that, in schools, leadership is predominantly exercised by the person in the highest position.

It should also be noted that there is wide variation in the methodologies employed by researchers in this field. In general, quantitative methods are used by researchers from the US, whereas British researchers are more likely to use qualitative approaches (Bolam, 1999).

The increasing policy emphasis on effectiveness, standards and the enhancement of teaching and learning in England and Wales has its parallels elsewhere. Research in North America has investigated and promoted

instructional leadership (Blase and Blase, 1998; Kliene-Kracht, 1993; Leithwood and Jantzi, 1999) and generated studies that focus on answering the question: 'Do principals make a difference?' More recently, the focus in the US has been to try to understand 'not only if principals have effects on school outcomes, but more particularly the paths through which such effects are achieved' (Hallinger and Heck, 1998, p 187). In a subsequent paper, Hallinger and Heck summarised the outcomes of their earlier literature reviews in this way:

'First, school leaders achieve effects on their schools indirectly. Skilful school leaders influence school and classroom processes that have a direct effect on student learning. Second, school leaders themselves are subject to considerable influence via the norms and characteristics of the school and its environment' (Hallinger and Heck, 1999, p 185)

1.5 Authors, funders and other users of the review

This review was conducted with funding from the DfES (via the EPPI-Centre) and with the support of the University of Leicester and the National College for School Leadership. The Review Group was initiated by the Standing Conference on Research in Educational Leadership and Management (SCRELM) and based at the Educational Management Development Unit, School of Education, University of Leicester. SCRELM was formed in 1999 as a direct result of an Economic and Social Research Council (ESRC) Invitation Seminar Series called 'Redefining Educational Management'. When the review was undertaken, SCRELM had 55 members, many of whom were leading scholars in their field and connected to extensive research and scholarly networks. Practitioner/users were invited to join a review advisory group and worked on the review in groups of three. The membership of these review triads was formed of SCRELM members and of those recommended through the good offices of the National College for School Leadership (NCSL).

The review was managed by this Advisory Group, which was responsible for:

- co-ordinating the review
- making decisions about specific review topics
- inviting participation from practitioners, other users and researchers from the SCRELM membership as well as from non-members and internationally
- approving the allocation of work and review schedules
- approving this report

This Group was chaired jointly by Professors Les Bell and Ray Bolam, supported by Leela Cubillo, the Research Associate to the Group and met within the timetable in the plan of action. David Jackson, then Director of Research at the NCSL, provided support for the Review Group by identifying practitioners to work on the reviews, by his participation in the Advisory Group and by arranging funding for Professor Geoff Southworth to work on the review. Geoff Southworth was at that time a visiting professor at the NCSL and a part-time consultant to the College, tasked with supporting and developing its research role. The membership of the Advisory Group is listed in Appendix 1.2.

1.6 Review questions

The main review question is:

- What is the effect of headteachers on student outcomes?

The subsidiary review questions are:

- What is the effect of headteachers on four aspects of student outcomes: achievement, attitudes, behaviour and recruitment?

and

- How do headteachers' leadership and management strategies contribute to these outcomes?

2. METHODS USED IN THE REVIEW

This chapter describes the methods used in conducting this systematic review. These, together with tools and procedures, were developed by the EPPI-Centre. Section 2.1 describes methods for user involvement, which are intertwined with each section of the review. Section 2.2 describes methods for identifying potentially relevant studies through searching and screening. Section 2.2 also describes the methods for describing studies through keywording. Finally, section 2.3 describes methods for in-depth scrutiny and synthesis of studies identified as relevant. The purpose, process and quality assurance measures for each stage are described.

2.1 User involvement

The involvement of users was a fundamental concern of this review. Consultation with users was carried out through the members of the School Leadership Review Group (SLRG), as listed in Appendix 1. Its members represented a range of viewpoints, with three headteachers (from infant, primary and secondary schools), a chair of governors who was also a parent, a senior staff member from the National College for School Leadership, and the Head of Policy for the Association of Teachers and Lecturers. The remaining 10 members were volunteer academics who were members of the Standing Conference for Research in Educational Leadership and Management (SCRELM), including one cross-cultural researcher: Professor Bill Mulford of the University of Tasmania. The Review Group helped to shape the review at all the key stages. In all it met on six occasions, including a meeting in October 2001 to finalise the list of included studies and another in April 2002 to comment on the first draft of this report.

Users also played an active role in undertaking the review. Data-extractions were carried out by review teams of three and six of these triads included a user. In this way, user perspectives were incorporated into the analysis and assessment of studies.

2.2 Identifying and describing studies

In order to be considered relevant for answering the review questions a study had to meet a set of inclusion criteria. This section describes (i) the detail of the criteria; (ii) the methods for identifying potential studies, and (iii) how the criteria were applied to the studies found. The inclusion/exclusion criteria are listed below and in Appendix 2.1.

2.2.1 Defining relevant studies: inclusion criteria

The following inclusion criteria were used for including and excluding studies.

- *On topic*

To be included, a study had therefore to report on the leadership of headteachers and principals working in primary, elementary, infant, junior, nursery, middle, lower, first, secondary, high, upper and special schools in the UK, and their

equivalents in other countries AND on their effect on students'/pupils':
achievement AND/OR attitudes AND/OR behaviour AND/OR recruitment.

- *Language and geographical limits*
An included study had to be reported in English.
- *Type of study and design*
An included study had to be based on primary, empirical research (and hence not a review) AND contain specific reference to student outcome measures, interpreted broadly to include those using:
 - researchers' informed perceptions and judgements
 - cognitive and non-cognitive measures of student achievement, including standardised tests
 - attitudinal measures (e.g. measures of pupil self-esteem and indices of motivation)
 - student behaviour measures (e.g. rates of exclusion, suspension of pupils from school, attendance, and pupil self-reports)
- *Date of research*
Research had to have been carried out since 1988, when the Education Reform Act for England was passed into law. This is because this new law brought about major policy changes affecting the roles of headteachers in England.

2.2.2 Identifying and describing studies

The review aimed to identify as many research studies as possible with the potential to answer the review question. Therefore, extensive searching was undertaken. Studies were identified by searching electronic databases and registers of educational research, by handsearching current and back numbers of relevant journals, by scanning available 'grey' literature, especially reports, and by personal contacts, in particular via the Advisory Group and the wider SCRELM network.

A pilot search was conducted on 18th May 2001 on five electronic databases, with school leadership as the search focus (BEI, ERIC, First Search, WorldCat and ERA). This generated over 100,000 hits, a good proportion of which were probably duplicates and many of which appeared to be on different topics. It became apparent from this that the search terms would need to be combined, in order to focus the search better. The aim was still to find as many relevant studies as possible. Search terms were combined and also chosen so as to minimise the risk of missing studies from other countries; for example, in North America, 'principal' is generally used, instead of 'headteacher'. Using the new search terms, the main search took place in June 2001 and 4,987 studies were found.

A handsearch was also undertaken of Educational Management Abstracts as well as of six key journals identified by the Advisory Group (see Appendix 4). These searches identified a further six studies.

In addition, SCRELM members were invited to recommend studies for investigation. While there was only a limited response to this request, the information provided by those who did respond was very useful in identifying some 'grey literature'. In this way, a further 13 studies were identified.

2.2.3 Screening studies: applying inclusion criteria

There were two stages of screening. At each stage the inclusion criteria described in section 2.2.1 (above) were consistently applied. The first stage of screening was conducted using the information provided by electronic databases. This usually consisted of the study title and an abstract, although the latter was not always provided. Where there was any doubt in a reviewer's mind about whether a study met the criteria due to lack of information provided, it was always included. A second stage of screening was then applied, this time using the same criteria to the full text of each study that had not been eliminated during the first stage.

2.2.4 Characterising included studies

All those available studies meeting the inclusion criteria were assigned a series of codes, using the *EPPI-Centre Educational Keywording Sheet* (EPPI-Centre, 2001a: version 0.9.4). The keywording tool is part of the EPPI-Centre Educational Keywording Strategy. It enables reports to be classified according to various criteria, including bibliographic detail such as how the report was identified, whether a report is published or unpublished, whether or not it is linked to another report, contextual detail including the language of its publication, and the country in which the study was carried out. In addition, key aspects of studies are coded for such things as the topic focus of the study, population on which the study focuses (e.g. teachers, learners, etc., including demographics of age and sex if study participants are learners), and the focus of the context of participants in the study (e.g. curriculum and educational setting of the participants). Moreover, the type of study is coded (e.g. outcome evaluation, descriptive study).

2.2.5 Identifying/describing studies: quality assurance process

An important consideration for a systematic review is that judgments made by reviewers are consistent and reliable. Where there are disagreements about the interpretations of questions or criteria, it is important that these are discussed by the team and a common understanding is reached. For this review, the Advisory Group took on responsibility for ensuring quality. For example, at a meeting in October 2001, the group checked the way inclusion criteria had been applied when screening. A sample of studies was considered and the group decision was that, whilst the criteria had been applied consistently, they had not been applied strictly enough. When the criteria were applied more strictly to all studies, a further 10 were excluded.

2.3 In-depth review

2.3.1 Detailed description of studies in the in-depth review

In order to focus on the included studies in an in-depth manner, data were extracted using a standardised template. The EPPI-Centre tool for *Extracting Data and Quality Assessing Primary Studies in Educational Research* (EPPI-Centre, 2001b: version 0.9.4) is a set of questions enabling a reviewer to draw out details on the aims of the study, the nature and characteristics of any

intervention, the nature and characteristics of the sample, the methods of analysis of the study, the outcome measures, results and conclusions. The tool also asks questions about the methodological quality of studies. The guidelines were applied by teams of three, using EPPI-Reviewer software.

2.3.2 Synthesis of findings

The findings of the eight studies included for in-depth review were synthesised by drawing up a table of these studies (see Appendix 4.1). Using his specialist knowledge, a single reviewer sought out common findings and at the same time took into consideration the methodological quality of each study. In this way, those with findings that were considered more trustworthy were given prominence. This work was then scrutinised by two other reviewers with specialist knowledge of school leadership and their views were incorporated. Following this, it was sent to members of the Advisory Group and to a staff member at the EPPI-Centre and revised in the light of their comments.

Table 2.1: Filtering of papers from searching to synthesis

Total number of 'hits' from electronic databases	4,987
Met inclusion criteria on the basis of the title and/or abstract	25
Found through handsearches	6
Personal recommendation	13
Not received or unavailable	3
Full reports of studies available	41
Studies that did not meet inclusion criteria applied to full-text	33
Included for in-depth review and synthesis	8

2.3.4 In-depth review: quality assurance process

For each study in the in-depth review, three reviewers independently completed each data-extraction. Six of these triads included a user working alongside two academics; the remaining four only had academics. After completing the data-extractions, the triads met to resolve any differences through discussion and agree a final version. Differences were caused by oversights, misunderstanding and differences in interpretation.

Two further quality assurance measures were adopted:

- Nobody reviewed a paper they had written, to avoid potential conflict of interest.
- Three EPPI-Centre staff members were second or third reviewers for five of the data-extractions.

3. IDENTIFYING AND DESCRIBING STUDIES: RESULTS

This chapter begins by characterising the details of the eight studies selected for in-depth review. This is followed by description of their topic focus, aims and method. The quality assurance procedures for the in-depth review are also described.

3.1 Comparative details of studies included in the in-depth review

Two of the eight included studies are descriptive and six are outcome evaluations. Most studies are of primary schools but there is a fairly even distribution in terms of country of origin. The two descriptive studies are both British, one is of a primary school and the other is the only one to include a special school; one author (McMahon) was involved in both. The four primary school outcome evaluations are from Hong Kong, Canada, the Netherlands and the US. One secondary school evaluation study is from the US and the other from Australia. Four studies are reported in books and four in journals, three in the same one (*International Journal of School Effectiveness and School Improvement*).

3.2 Description of studies included in the in-depth review

Bolam *et al.* (1993) aimed to identify management processes and structures which staff in individual schools recognised as effective practice. They administered a Likert-type questionnaire to the headteacher and a sample of teachers in volunteer schools: 33 primary, 24 secondary and two special. Six hundred and forty-three completed questionnaires constituted a response rate of 84 percent. Certain items were designated as proxy outcome measures (e.g. 'in this school academic attainment is high') and the remaining items were designated as process measures (e.g. 'in this school the head is open to suggestions from the staff'). The chi square test of significance was used to compare the responses of primary and secondary staff and Z scores were calculated to arrive at an overall response for each school. The latter was used in a quadrant analysis to allocate schools to one of four cells (i.e. high or low on process and outcome measures) and to identify a purposive sub-sample of 12 case study schools - one special, seven primary and four secondary - in which interviews were then conducted.

McMahon (2001) carried out a case study of a single primary school in Bristol, England. The study was a follow-up to one carried out five years earlier which had concluded the school was succeeding against the odds in difficult socio-economic circumstances. Its aim was to investigate the extent to which the school had sustained its success in the intervening period. In the five years since the first study, the original headteacher had retired and there had been four successor headteachers, acting or substantive. Interviews were carried out with three of these headteachers as well as nine teachers and support staff – seven of whom

had been in the original sample – a long-standing governor and a senior LEA representative. Contextual, process and outcome and data were taken into account. These included the ethnic make-up, percentages of pupils with English as an additional language, entitlement to free school meals and special educational needs, pupil-teacher ratios, support staff per pupil, inspection reports, and Key Stage 2 SAT scores.

Cheng's (2002) outcome evaluation study aimed to investigate how principals' leadership is related to school performance in terms of multi-level indicators such as schools' organisational characteristics, teachers' group-level and individual-level performances and students' attitudes. Strong leadership is interpreted to mean that a principal can be supportive and foster participation for teachers, can develop clear goals and policies and hold people accountable for results, can be persuasive at building alliances and solving conflicts, can be inspirational and charismatic, and can encourage professional development and teaching improvement. The study focused on 190 Hong Kong primary schools and in particular on grade 6. The measures for teachers were grouped into three sets:

- set A: teachers' job attitudes, social norms, and organisational structure
- set B: teachers' satisfaction with principal, teachers' relationships, school's strength of organisational culture and organisational effectiveness
- set C: teachers' professionalism and principal's leadership

These three sets of questionnaires were administered separately to three groups of randomly selected teachers within each school. The students' attitude measures were completed by a group of students randomly selected from each sampled class, approximately half the class. For each sampled school, the responses of teachers and students were averaged on each measure.

Leitner's (1994) outcome evaluation study investigated the principal's role as instructional manager, its relationship to student achievement and how principals influence teachers to accomplish the school's goal of increasing student learning in 27 US elementary schools over two years. Only principals who were in at least their third year and teachers who were in at least their second year at their current school were invited to participate. Twenty-seven principals, out of a possible 36 (75%), and 412 out of 430 teachers (95%) responded. Principal instructional management behaviour was measured by a modified form of the Instructional Management Rating Scales (IMRS). Socio-economic status (SES) was measured by the number of students who received free and reduced-cost lunches and categorised as high, middle and low. Multiple regression analysis was used to regress student achievement gain on three levels of instructional management and school SES for each of three subjects: mathematics, language and reading. Correlations were examined for principals from the three school achievement levels.

Leithwood and Jantzi's (1999) outcome evaluation study investigated the effects of transformational leadership practices on a selection of organisational conditions and on student engagement with school. This is the fourth in a series of studies, all investigating how leadership is mediated at across the school and in the classroom. The sample consisted of 2,424 teachers (75% response rate) in 98 Canadian elementary schools and 6,490 students (90% response rate) in the highest grade of each school, whether grade 5, 6, 7 or 8. The schools were in rural, suburban and urban areas and the average family income of \$59,658 was close to the national average family income of \$55,247.

Questionnaires were administered: the *Forms A and B for the Organisational Conditions and School Leadership Survey* were completed by teachers (each teacher being randomly assigned one or other in schools with more than 10 teachers), and the *Student Engagement and Family Educational Culture Survey* form was completed by students. Data were aggregated to the school level using Statistical Package for the Social Sciences (SPSS) to calculate means, standard deviations, and reliability coefficients (Cronbach's alpha) for all the scales measuring the variables. The study measured teacher ratings of organisational conditions and student ratings of family culture and engagement and produced a factor matrix from these (for teacher ratings of school conditions and leadership within their schools); it also measured relationships between leadership, organisational conditions, family educational culture and student outcomes.

A three-year outcome evaluation study by Silins and Mulford (2002) focuses on three aspects of high school functioning in the context of educational reform in two Australian states: leadership and the school, organisational learning and the effect of both on student outcomes. Its broad aim is to extend present knowledge and understanding of what makes a difference to high school performance. Data were collected from 2,503 teachers and their principals, who were from 96 secondary schools. The first phase of data-collection in 1997 included student surveys of 3,508 students at year 10 and in the final phase of data-collection in 1999-2000, student outcome data were collected by surveying 1,805 Year 12 students. The teacher/principal questionnaire focused on leadership and organisational learning. The student outcome measures were participation and engagement and factors likely to affect these were taken to be family educational culture, SES and academic self-concept. Measures of student achievement and retention were aggregated for each school from public examination results and school completion rates. The retrospective evaluation investigated the relationship between variables. Two hypothesised models were developed using path analysis with latent variables to investigate the nature and strength of all the relationships in the models.

An outcome evaluation by Van de Grift and Houtveen (1999) sought to find out about the changed context of the Dutch [primary school] principals and how this might have affected (i) their leadership and (ii) pupil achievement. This was carried out in response to a review of more than 40 studies published about the principal's role in school between 1980 and 1995, where none of the Dutch studies had shown a positive relationship between educational leadership and student achievement.

The authors' rationale is that educational leadership can be identified by teachers. Therefore, by measuring teachers' ability to identify leadership initiatives, it is possible to measure the effect of leadership (albeit modified by many other possible variables).

The retrospective evaluation investigated the relationship between variables, as measured by tests of Dutch primary pupils in arithmetic, language and information processing. One was carried out for this research in 1989, while others were carried out by the schools (the national Dutch test known as the 'CITO-Eindtoets voor het Basisonderwijs') in 1991, 1992 and 1993 and the data from these tests were used in this study. The total number of participants in the study and their specific age group are not stated.

In 1989, the sample was grade 5 or 7 teachers in 500 Dutch primary schools; data were collected from 250 schools. In 1993, the sample was grade 7 teachers in 386 Dutch primary schools; data were collected from teachers in 383 schools.

In 174 of these, data were collected about grade 8 pupils' performance in language, arithmetic and information processing. In 1998, the sample was of teachers of grades 1-2, 3-5 and 6-8 (one of each per school) from 600 schools and data were received from 306 schools. In this sample, Catholic schools were over-represented, which the authors claim is not significant. It would appear that the sample was chosen to take account of key variables in school type, but this is not stated.

Questionnaires were used to collect the data and in 1989, the response rate was 50 percent. These were analysed using a 'Rasch model' and 'TPL scale' (p 379). Key variables were compared using the 'Anderson test and the 'Martin-Lof test' (p 381). The reliability of the data analysis was increased by comparing data from two different measurement instruments. They did not differ significantly.

An outcome evaluation by Wiley (2001) aimed to analyse the relationship between faculty, leadership and student achievement in mathematics in 214 high schools in 30 US metropolitan statistical areas. The sample consisted of 2,205 mathematics teachers and 4,329 mathematics pupils, aged 11 to 16 and of mixed sex. The survey sample was drawn from the NELS: 88/NSES study using systematic random sampling, which approximates to simple random sampling without replacement. The student sample was one-quarter (25%) black or Hispanic; those of limited English proficiency or educational disability were excluded. The instruments were a self-completion report or diary and a student test, validated in the NELS longitudinal study. A retrospective, cross-sectional analysis employed a multi-level model applied at organisational and individual levels.

3.3 In-depth review: quality assurance procedures

The in-depth review used a quality assurance system that was developed by the EPPI-Centre. This evaluates the reliability of the study findings. It is predicated upon the understanding that a study's findings are reliable to the extent that the research methods used are also. This includes how the methods were applied and reported. Reviewers are able to then present their own view of a study's findings in the light of the quality assessment.

As noted in Chapter 2 (section 2.3.5), three reviewers independently undertook data-extraction and quality assessment for each study. The three reviewers then met and discussed the study before reaching a consensus.

4. FINDINGS AND IMPLICATIONS

This chapter presents the findings from the studies included in the in-depth review and also the synthesised evidence that addresses the review question. It assesses the implications of these results for policy, practice and research.

4.1 Findings of studies included in in-depth review

The study of Bolam *et al.* (1993) measured the effect of school leadership and management on such student outcomes as respondent perceptions (i.e. of high student attendance, unproblematic school discipline, low vandalism and parents being proud of the school) and did not collect data about student achievement, attitudes, behaviour or recruitment. Therefore, the study was of limited relevance.

The overall conclusion of the study was that staff in various types of schools had similar views about what constitutes good management. The main themes to emerge from this study are most of the main themes of school leadership theory: the importance of ethos, aims, vision and school policy; the headteacher, the senior management team; structure and decision-making; professional working relationships; and links with parents, governors and LEA.

McMahon (2001) reported on student behaviour and attendance. The researcher was building on her earlier study, in which the successful outcomes were largely attributed by the respondents and the researchers to effective headteacher leadership. Following the retirement of the first headteacher, her four successors had encountered problems. The school had achieved poor National Curriculum Assessment (SATs) scores and been judged by OFSTED inspectors to have been through a period of considerable instability, caused by difficulties in the leadership and management of the school. Both attendance and student behaviour had significantly deteriorated. The researchers attributed these changes largely to the ineffective leadership of two of the three successor heads.

The study by Cheng (2002) reports data about student attitudes. Its main findings are as follows. There was a moderate correlation between the principal's leadership and certain measures of students' attitudes. All the dimensions of the principal's leadership were related to students' attitude towards their school at the 0.01 significance level with coefficients larger than 0.22. The stronger the human, structural, political, symbolic and education aspects of the principal's leadership, the more the students were committed to the school, satisfied with the school's arrangements and activities, and enjoyed the school life. The human, structural, and political dimensions of leadership were related to students' positive attitude to teachers and the political and symbolic dimensions to students' positive attitude to learning. For other measures of students' attitude – such as self-concept, attitudes to peer, feeling of homework overload and intention to dropout – the correlation with principal's leadership seemed to be negligible.

The study claims that strong leadership correlates with organisational characteristics, teacher group performance, teacher individual performance and student performance, with the implication that principals' leadership is important to school performance at the organisational level. The author concludes that, although principals' leadership may have direct effects on organisational characteristics and teachers' performance, it is the latter two that may affect

students' performance. Thus, the effect of principal leadership on students was mainly indirect, even though some direct effect was still possible.

The study by Leitner (1994) reported data about student achievement. However, the results show little or no relationship between any measure of instructional management and student achievement for two separate years of data. *Defining the school's mission* was positive and significantly related to student achievement in mathematics, and positive and approached significance in language, and reading. However, the scores on the dimension accounted for only one to two per cent of the variance in achievement gain. No relationships were found for 1986-87. In the combined middle and high SES schools, although no relationship was found between the total score on the IMRS and student achievement for either year, the dimension, *Promoting a positive school climate*, was significantly related to student achievement in language, and approached significance in reading. However, the scores on the dimension again accounted for less than two percent of the variance, and no relationships was found in 1986-87. School SES was negatively related to scores on *Defining the school's mission* and *promoting a positive school climate*, accounting for nine to 10 percent of the variance of the principals' scores on these two dimensions. The results suggest that principals in high SES schools performed more instructional management behaviours than principals in low SES schools, especially in terms of the two dimensions. Thus, it appeared that SES is related to the frequency and type of principal instructional management behaviour.

The results support one part of the hypothesis that principals in high achieving schools engage in more behaviours associated with cultural linkage than principals in other schools, although the differences between the two means are not significant. The second part of the hypothesis is not supported. Although principals in high achieving schools engaged in slightly more behaviours associated with the interpersonal linkage than other principals, the differences were small. All principals, whatever the level of school achievement, used all three linkages to influence teacher behaviour. They did not use one or two linkages to the exclusion of the other.

The author concludes that this study did not find a significant, positive relationship between principal instructional management and increased student learning. While the relationship between instructional management and student achievement was in the positive direction, it was not statistically significant and appeared to be influenced by environmental and organisational characteristics. Moreover, instructional management appeared to account for only a very small portion of the variance in student achievement gain. While this study does not refute that instructional management behaviours can be effective, it does add a strong cautionary note about linking them directly to student outcomes.

Leithwood and Jantzi (1999) report findings about 'transformational leadership' and student participation. Although they report that the effect on student participation is not significant, they claim that 'transformational leadership' does have an effect on school conditions and thence on classroom conditions and a weak, but statistically significant effect on student identification. The authors make the following conclusions:

- Family educational culture explains a very large proportion of student engagement.
- 'Transformational leadership' has strong effects on school conditions.
- 'Transformational leadership' has weak but significant effects on student identification, not participation.

The authors state that the most obvious interpretation of their findings is that principals and transformational leadership practices make a disappointing contribution to student engagement. A second interpretation cautions against dismissing as not meaningful the, admittedly small, effect of leadership on student engagement. More generally, the authors conclude that future research should focus on the measurement of student background variables. This is because the study appears to have uncovered a complex set of relationships and interacting variables.

The study by Silins and Mulford (2002) reports findings about participation. The findings may be summarised as follows.

Model 1: Factors influencing student engagement with school

Three latent variables emerged as direct predictors of engagement: teachers' work, participation and self-concept. *Home background* had a strong indirect effect on engagement through the support provided for teachers' work by the lower SES families in the larger schools, through its positive influence on academic self-concept, which is more evident in the larger schools and through the parental encouragement of participation in the smaller schools. The predominant total effect of *school size*, although marginal, favoured the larger school influences on *engagement*, that is, through teachers' work and academic self-concept. School size itself is not a major factor. This is in contrast to the moderately larger total effect of school size that favoured the smaller school influences on participation and where the associated direct effect of school size on participation indicated school size is a factor worthy of consideration in relation to participation. Two other significant indirect effects on engagement associated with smaller rather than larger schools were *leader* and *organisational learning*.

Four latent variables emerged as direct predictors of academic self-concept: teachers' work and participation (which had the strongest effect), home background and school size. The indication was that these positive influences on *academic self-concept* were more evident in the larger schools. *Home background* predominated in its total effect on *academic self-concept* with *teachers' work* having a lesser but strong total effect. Three latent variables emerged as direct predictors of participation: home background, the dominant influence, then teachers' work, followed by school size. The positive influences on *participation* are associated with the smaller rather than larger schools.

Four latent variables emerged as direct predictors of *teachers' work*. *Home background* was most strongly associated with students' perceptions of teachers' work. *Students' SES* was negatively associated with teachers' work, indicating that the students of lower SES tended to perceive teachers' work more positively. However, a moderately strong and positive indirect effect counteracted this, to result in a marginal negative total effect on *teachers' work*. *School size* directly influenced teachers' work, indicating that students from the larger schools held positive perceptions of teachers' work. Organisational learning, the variable that measured the extent to which a school operates as a learning organisation, was a direct predictor of *teachers' work*.

Four latent variables were direct predictors of organisational learning in this model: teacher leadership, active involvement, staff valued and leader. Leaders also exerted a strong indirect effect on organisational learning through the other two leadership variables, which resulted in a leader exerting a predominant total effect on organisational learning. *School size* had an indirect and negative effect on organisational learning through *leader and teacher leadership*, indicating that

the smaller schools, rather than the larger schools, are associated with leader and teacher leadership and, indirectly, with organisational learning. *Active involvement* and *teacher leadership* were direct predictors of *staff valued*, which mediated these effects through to organisational learning. *Leader* has the strongest total and indirect effect on *staff valued*. Two latent variables were direct predictors of *teacher leadership*: leader and school size. Not surprisingly, *leader* was a very strong predictor of *active involvement*. In this model, *leader* itself was directly influenced by *school size* and home *background*, indicating that *leader* is associated with smaller schools and students from supportive home backgrounds.

Model 2: Factors influencing retention and student achievement (pp 24-25)

This model was developed to examine the influence of the non-academic student variables (*participation in school*, *engagement with school* and *academic self-concept*) on *retention* and *academic achievement*, while controlling for *SES*, *home background* and *teachers' work*. Three latent variables were direct predictors of *achievement*: retention, SES and participation. Two latent variables were direct predictors of *retention*: SES and engagement. *Engagement with school* was a direct predictor of *retention* and three latent variables influenced *engagement* directly: teachers' work, participation and school size. The variables in the model explain 64 percent of the variation on *academic achievement* in the 50 sampled schools.

Van de Grift and Houtveen (1999) report findings about student achievement. The authors argue that it would be difficult to establish a strong correlation between school leadership and pupil achievement, since there are so many other possible variables in each school. In 1989 no significant correlation was found, but the results for 1993 show a weak correlation between leadership and educational achievement in three subjects (arithmetic, language and information processing). They conclude that principals did have an effect on their schools and that this increased between 1989 and 1998. The findings are said to provide weak evidence for leadership actually affecting school 'output' but that better evidence is required and this needs to be investigated using an experimental, or quasi-experimental design (pp 387-388). The following variables, which were not measured, are suggested as mediating the effect of the reported variables: quality of the curriculum; amount of instruction time; attentiveness of pupils; opportunity to learn quality of instruction; and ability of teachers.

The context of the study is adequately described in that it provides details about the schools, although there is no breakdown of school type, nor are data reported about the characteristics of the population and the sample. The authors are cautious in their findings and conclusions (although less so in the abstract). The quality of the study is diminished because data were collected on three occasions from different samples.

Wiley (2001) reports findings about student achievement. The authors claim to provide evidence that transformational leadership improves student achievement in mathematics in US high schools, although this is mediated through the social organisation of teachers and school administrators. It is pertinent that the author found that this only happens well where there is a strong professional community in a school, although it will not happen if the community does not have transformational leadership. The study's findings are fully discussed in relation to an explicit theoretical framework. There is a full specification of both the data and analysis; the design, analysis and interpretation are trustworthy.

Table 4.1: Summary of findings of included studies

Bolam <i>et al.</i> (1993)	Participative leadership, mediated through teacher activity, contributed effectively to student outcomes.
Cheng (2002)	Principals' leadership has a direct effect on organisational characteristics and teacher performance. It is teacher performance that directly affects student performance.
Leithwood and Jantzi (1999)	Transformational leadership has strong direct effects on school conditions, which in turn have strong direct effects on classroom conditions.
Leitner (1994)	Principals in high achieving schools engage more in behaviour associated with cultural linkage than principals in other schools. Student learning appeared to be influenced by environmental and organisational characteristics and SES.
McMahon (2001)	The departure of one headteacher was followed by an unstable period of leadership. This, together with a combination of other factors, led to a 'downward spiral' (p 109) reflected in a drop in SATs scores, pupil behaviour problems, poor staff communication and morale, and an unfavourable inspection report. Inconsistent, changed and poor leadership was the main cause. The transition from one headteacher to another is a major innovation, which needs to be carefully managed.
Silins and Mulford (2002)	A strong <i>bottom up</i> approach existed in those schools identified as learning organisations. Key factors are trusting and collaborative climate; shared and monitored mission; taking initiatives and risks; and professional development. Transformational leaders help establish the systems and structures that support <i>bottom up</i> approaches and allow <i>top down</i> approaches to succeed. The more distributed the leadership is throughout the school community, in particular to teachers, the better the performance of that school in terms of student outcomes.
Van de Grift and Houtveen (1999)	The results show a weak correlation between leadership and educational achievement in three subjects (arithmetic, language and information processing). The findings provide evidence that principals do have an effect on their schools
Wiley (2001)	Transformational leadership has an effect, especially within a strong professional community.

4.2 Synthesis of findings from studies in in-depth review

4.2.1 Nature of studies in in-depth review

This review set out to find out what the effect of headteachers is on student outcomes. In particular, it wanted to know what effect headteachers have on four aspects of student outcomes: achievement, attitudes, behaviour and recruitment. It also sought to find out how headteachers' management strategies contribute to these outcomes.

In their descriptive study of 57 British primary, secondary and special schools, Bolam *et al.* (1993) conclude that participative approaches to leadership mediated by teacher activity were perceived by their respondents to be effective in contributing to student outcomes. However, it is unclear what effect the various leadership and management strategies actually had on student outcomes because the proxy measures were respondent perceptions. This study had weak outcome measures in relation to this review.

Although McMahon (2001) reports on only a single primary school, the data are rich and detailed and the findings are based on the experiences and responses of key protagonists in the five-year case. These respondents were virtually unanimous in attributing the deterioration to the changes in leadership, a view endorsed by the inspection report. Moreover, the arrival of a new, experienced headteacher was seen as helping the school to get 'back on track' (p 114). The case study is well designed and uses 'hard' data (e.g. SATs scores) as well as qualitative methods. Nevertheless, one cannot generalise from a single case.

Four primary school studies have generally sound designs, except Van de Grift and Houtveen's (1999) study, which compares data from different samples. Leithwood and Jantzi's (1999) outcome evaluation study of Canadian elementary schools measured teacher ratings of organisational conditions, student ratings of family culture and engagement, and the relationships between leadership, organisational conditions, family educational culture and student engagement. They find that family educational culture explains a very large proportion of student engagement and that transformational leadership has strong effects on school organisational conditions. The authors caution against dismissing as not meaningful the, admittedly small, effects of leadership on student engagement, concluding that future research should focus on the measurement of *student background variables*.

Cheng's (2002) outcome evaluation study of Hong Kong primary schools found that leadership is important to school performance at the organisational level. The negligible relationship of leadership to principal and school demographic characteristics was taken to suggest that leadership style may not be attributable to the pre-existing demographic factors although, it is important to note, no account of SES appears to have been taken in this study. The overall conclusion is that, although principals' leadership may have direct effects on organisational characteristics and teachers' performance, it is the latter two that may affect students' performance. Thus, the effect of principal leadership on students is mainly indirect. Judgements on student outcomes were based on attitude measures rather than test scores.

Van de Grift and Houtveen's (1999) outcome evaluation investigated the relationship between variables retrospectively, as measured by school leadership questionnaires and tests of Dutch primary school pupils in arithmetic, language and information processing. They conclude that the findings provide weak evidence that principals do have an effect on their schools and that this increased between 1989 and 1998, but that better evidence is required based on an experimental or quasi-experimental design.

Leitner's (1994) soundly designed outcome evaluation of 27 US elementary schools used measures of principal instructional management, SES and student achievement scores in mathematics, language and reading. No significant positive relationship was found between principal instructional management and

increased student learning, which appeared to be influenced by environmental and organisational characteristics and SES.

Two secondary school studies have robust designs. Wiley's (2001) outcome evaluation study analysed the relationship between faculty, leadership and student achievement in mathematics in 214 US metropolitan high schools using a self-completion instrument and an independently validated student test. It found evidence of a positive relationship between faculty relations and student achievement in mathematics, especially in lower SES schools. Transformational leadership had some effect within a weak professional community but was very effective in a strong professional community. Thus, the social organisation of teachers and administrators within schools can affect student achievement.

Finally, the large-scale, three-year outcome evaluation study by Silins and Mulford (2002) collected data from teachers and principals plus outcome data from year 10 students in Australian secondary schools. A sophisticated design used model building and path analysis to find that the more transformational and distributed the leadership, the better the student outcomes against a backdrop of family influence and support. Such school level factors had a stronger influence on students' academic achievement than students' SES or home background.

4.2.2 Synthesised evidence of this review

The evidence from this systematic review has implications for practice, policy and research. All eight studies reviewed provide some evidence that school leaders do affect student outcomes. The evidence from one descriptive study is based on teachers' perceptions and the second on a single case study. The evidence from three of the six outcome evaluation studies is slightly more firmly based while the remaining three provide weak but positive evidence.

The evidence is mixed in relation to what effect headteachers have on four aspects of student outcomes: achievement, attitudes, behaviour and recruitment. In terms of achievement, Van de Grift and Houtveen (1999) report weak positive effect on three subjects; Leitner (1994) reports little or no effect on mathematics, but significant effect on language and findings which approach significance for effect on reading. The evidence from the single case study of a primary school (McMahon, 2001) is, of course, limited but very compelling in terms of its richness and apparent authenticity. One secondary school study (Wiley, 2001) found evidence of significant effect on mathematics test scores while the other (Silins and Mulford, 2002) also found evidence of indirect effect on student achievement.

Two primary school studies provide mixed evidence about headteachers' effect on attitudes to learning. Leithwood and Jantzi (1999) report no significant effect on student engagement while Cheng (2002) found evidence of a moderate correlation between principals' leadership and attitudes to learning. One secondary school study (Silins and Mulford, 2002) reported indirect effect on non-academic student variables: that is, participation in school, engagement with school and academic self-concept.

None of the studies collected specific data on the effect on recruitment or behaviour (i.e. student discipline) although one descriptive study (Bolam *et al.*, 1993) does provide some positive evidence based on proxy measures. One secondary school study (Silins and Mulford, 2002) found evidence of indirect effect on student retention. McMahon (2001) found evidence of the negative effect of inconsistent leadership on pupil behaviour.

Most of the studies present relevant findings about how headteachers' leadership and management strategies contribute to these outcomes. Bolam *et al.* (1993) emphasise the importance of 'participative leadership' in their descriptive study. McMahon's (2001) evidence is unequivocal in attributing the outcomes to school leadership. Cheng (2002) found that strong leadership is positively associated with high organisational effectiveness and strong organisational culture and, in turn, students in such schools tend to have positive attitudes. Leithwood and Janzi (1999) report that transformational leadership has a strong direct effect on school conditions which, in turn, has an effect on classroom teaching. Van de Grift and Houtveen (1999) refer to the many other possible variables which make it difficult to establish a strong correlation between school leadership and pupil achievement, arguing that better evidence is required using an experimental, or quasi-experimental design to investigate a range of intervening variables. Leitner (1994) found that the dimension 'promoting a positive school climate' is significantly related to student achievement in language, and approaches significance in reading. Wiley (2001) concludes that the effects of transformational leadership and professional community are interdependent. Silins and Mulford (2002) found comprehensive evidence of the pathways via which leadership affects teachers and school conditions, which in turn affects student outcomes.

Overall, the evidence points towards headteachers having some effect on student outcome. How this comes about is complex, indirect and mediated through various agents.

4.3 Strengths and limitations of the review

This review is based on a limited number of studies that, nevertheless, provide findings that partially answer the review question. A major problem encountered in conducting this review was that, although a large number of potentially relevant studies were identified, very few of these studies contained research evidence on student outcomes. The lack of such evidence was the major reason for excluding studies from this review (see Appendix 5). Although the findings from all eight studies point very broadly in the same direction, the robustness of their designs varied.

There were some operational mistakes made in carrying out the review. Accurate records were not kept of all searches on electronic databases. In addition, due to a misunderstanding, two different sets of data extraction guidelines were used for the review: the paper-based version that was initially used (version 0.9.3) was different from the electronic version (version 0.9.4) used thereafter. Although it is doubtful this made a difference to the results, it is a potential weakness of this review.

The EPPI review process is designed to identify research evidence to provide the answer to a specific question; in the case of this review, the effect of school leadership and management on student outcomes. An essential part of this is to write a protocol before beginning the review, which states the question and the methods to be used. This protocol is peer-refereed and a review is undertaken in accordance with what it states. However, due to operational difficulties only a draft protocol was produced, which was not peer-reviewed. This lack of a final, agreed protocol led to problems with identifying a suitable question and with uncertainty about how broad or narrow it ought to be. It also led to uncertainty about inclusion criteria, which should have been clearly determined in advance,

but were not. For example, initially it was decided only to include studies from the UK; however, this decision was later reversed and studies from other countries were consequently included.

The lack of a final protocol also meant that the review team had to formulate the conceptual issues while undertaking the review, instead of clarifying them in advance. Moreover, the theoretical and conceptual background has not been informed by the extensive literature in management theory. A better understanding and explanation of this could have improved the analysis and synthesis of the studies.

Nevertheless, it is important to note that for the reviewers there were many positive outcomes. Certainly it has shown the need for many to re-assess their ideas about the nature, purposes and scope of literature reviews, the ways in which articles are prepared for publication, and the role of both journal editors and referees.

4.4 Implications

In considering the wider implications of this review, several observations are pertinent. First, the findings broadly confirm the conclusion of the review by Hallinger and Heck (1999) that there is some evidence to support the view that leadership does affect student outcomes, albeit indirectly. Just one case study indicates a more direct relationship between leadership and outcomes (McMahon, 2001). Second, the most methodologically sophisticated studies, notably that by Silins and Mulford (2002), demonstrate the pathways that help to explain this effect. Third, there are important implications for research into this topic, which should either adopt sound experimental designs with, for example, multi-level modelling and path analysis or employ qualitative methods, such as the case study (McMahon, 2001). Fourth, several studies highlight the important influence of SES on outcomes. This needs to be born in mind when considering Ouston's (1999) warning about the superficial interpretation and use of school effect data. Fifth, Leitner (1994) echoes this note of caution in relation to school improvement, in warning against acting on conclusions from these school effect data.

4.4.1 Implications for policy

The overall evidence indicates that headteacher leadership and management does make a difference to pupil performance, that distributed leadership is efficacious and that the absence of staff involvement may have a negative effect. This is consistent with informed professional opinion.

It is clear from the studies included in this review that the evidence of the effect of headteachers on student outcomes shows that such effect is largely indirect. It is mediated through key intermediate factors, namely the work of teachers, the organisation of the school, the formulation of student attitudes and relationship with parents and the wider community. Thus, in order to influence student outcomes, it is necessary for headteachers to ensure that there is a strong sense of professional identity among teachers.

Schools do not exist in isolation and the studies included in this review point to the importance of factors outside the school in shaping student outcomes. It follows, therefore, that headteachers have an important role in building positive

relationships with parents and the wider school community in order to mediate the effect of external factors on student outcomes. One study highlights the need for careful management of the transition from one headteacher to another.

4.4.2 Implications for practice

This review shows that in an area in which significant policy decisions have recently been taken there is very little research evidence available to illuminate the precise nature of the relationship between the leadership and management strategies adopted by headteachers and the learning outcomes of their pupils. Effective leadership is a key factor in a school's success. It should be recognised, however, that such leadership is not merely located in the senior management of the school. This has implications for leadership training.

4.4.3 Implications for research

This review shows that there is a lack of studies with appropriate measures of outcomes on this topic, apart from Sillins and Mulford (2002). There is a similar lack of longitudinal studies that show the effect of a change in headteachers in the same school. The need for longitudinal case studies is amply demonstrated by the one (McMahon, 2001) considered here. There is already some case study material but this needs to be further extended to include studies that focus on outcomes as well as processes.

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APPENDIX 1.1: Advisory Group membership

The review was managed by this Advisory Group, which was responsible for:

- co-ordinating the review
- making decisions about specific review topics
- inviting participation from practitioners, other users and researchers from the SCRELM membership as well as from non-members and internationally
- approving the allocation of work and review schedules
- contributing to the 'mapping' exercise
- approving this report

The Members of the Advisory Group

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CREATE Consultants
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APPENDIX 1.2: Review Group membership

Review Group

This Review Group was co-ordinated by Professor Les Bell (School of Education, Leicester University) and Professor Ray Bolam (School of Social Sciences, Cardiff University).

The other Review Group Members were as follows:

Dr Lesley Anderson, Open University
Mrs Shirley Andrews, Parent and Chair of Governors, St Peter's Primary School, Hinckley
Kath Aspinwall, Sheffield Hallam University
Angela Bird, Headteacher, Dickens Heath Community Primary School, Solihull
Dr Nigel Bennett, Open University
Professor Sonia Blandford, Canterbury Christ Church University College
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Mark Brundrett, Leicester University
Professor Tony Bush, Reading University
Dr Hugh Busher, Leicester University
Dr Marianne Coleman, Leicester University
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Ms Leela Cubillo, Leicester University
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Professor Brian Fidler, Reading University
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Professor Ron Glatter, Open University
Gail Goodman, Head of Breadsall Primary School, Derby
Dr Helen Gunter, Birmingham University
Professor Chris James, University of Glamorgan
Jane McGregor, Open University
Margaret McLay (Sixth form college lecturer)
Ms Agnes McMahon, University of Bristol
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Dr Michael Strain, University of Ulster
Mrs Meryl Thompson (Head of Policy, Association of Teachers and Lecturers)
Mr Dick Weindling, CREATE Consultants
Dr Philip Woods, Open University

APPENDIX 1.3: Review triads

Triad 1	Kath Aspinwall Tim Simkins Ken Cook* (practitioner attached to Sheffield Hallam University)
Triad 2	Philip Woods Megan Crawford Ron Glatter
Triad 3	Chris James Stephen Drodge Angela Bird* (Infant school headteacher)
Triad 4	Hugh Busher Sonia Blandford Gail Goodman* (Primary school headteacher)
Triad 5	Nigel Bennett Lesley Anderson Jane McGregor
Triad 6	Geoff Southworth Dick Weindling Meryl Thompson* (Head of Policy, Association of Teachers and Lecturers)
Triad 7	Marianne Coleman Mark Brundrett Shirley Andrews* (Chair of Governors, primary school)
Triad 8	Mervyn Flecknoe Marie Brown Margaret McLay* (Sixth form college lecturer)
Triad 9	Helen Gunter Agnes McMahon Michael Strain
Triad 10	Tony Bush Brian Fidler Bill Mulford

- The first person named in each triplet was the triad convenor.
- Those marked with an asterisk are practitioners.

APPENDIX 2: Inclusion criteria

The following inclusion criteria were used for including and excluding studies.

- *On topic*

To be included, a study had therefore to report on the leadership of headteachers and principals working in primary, elementary, infant, junior, nursery, middle, lower, first, secondary, high, upper and special schools in the UK, and their equivalents in other countries AND on their effect on students'/pupils': achievement AND/OR attitudes AND/OR behaviour AND/OR recruitment.

- *Language and geographical limits*

An included study had to be reported in English.

- *Type of study and design*

An included study had to be based on primary, empirical research (and hence not a review) AND contain specific reference to student outcome measures, interpreted broadly to include those using:

- researchers' informed perceptions and judgements
- cognitive and non-cognitive measures of student achievement, including standardised tests
- attitudinal measures (e.g. measures of pupil self-esteem and indices of motivation)
- student behaviour measures (e.g. rates of exclusion, suspension of pupils from school, attendance, and pupil self-reports)

- *Date of research*

Research had to have been carried out since 1988, when the Education Reform Act for England was passed into law. This is because this new law brought about major policy changes affecting the roles of headteachers in England.

APPENDIX 3: Search strategy

An example of the results of database searches

ERIC 1985-2001

	Hits	Selected
• School leadership and student performance	11	11
• School leadership and improvement	136	76
• School leadership and performance	275	15
• School leadership and effectiveness	0	0
• School effectiveness	4080	0
• School effectiveness and leadership	4	2
• School effectiveness or school improvement and leadership	3850	0
• School improvement and leadership	4	0

BEI 1986 – 2000

• School leadership and improvement	2	2
• School improvement and leadership	8	8
• School leadership	28	6
• School effectiveness	980	286
• School improvement	141	24
• Raising standards	19	9
• Pupil achievement	9	4
• Student achievement	32	5
• Student performance	28	3
• Pupil performance	11	1
• School leadership and performance	0	0

ERA

• School leadership	6244	0
• School + leadership	314	65
• School + effectiveness	396	18
• Pupil + performance	48	0
• School + leadership and improvement	322	18

APPENDIX 4: Journals searched by hand

School Effectiveness and School Improvement

School Leadership and Management

British Educational Research Journal

Cambridge Journal of Education

Oxford Review of Education

Educational Management and Administration

APPENDIX 5: Details of studies that did not meet inclusion criteria applied to full text

The following studies were excluded when screened with the inclusion criteria applied to the whole document full document.

Excluded study	Reason for exclusion
Ainscow M, Southworth G (1996) School improvement: a study of the roles of leaders and external consultants. <i>School Effectiveness and School Improvement</i> 7 : 229-251.	Does not focus on headteachers
Barker B (2001) Do leaders matter? <i>Educational Review</i> 53 : 65-76.	Not empirically based
Beck LG, Murphy J (1996) The leadership imperative. In: <i>The Four Imperatives of A Successful School</i> . Thousand Oaks, CA, USA: Corwin Press.	Does not consider relevant student outcome measures
Blase J, Blase J (1998) <i>Handbook of Instructional Leadership: How really good principals promote teaching and learning</i> . Thousand Oaks, CA, USA: Corwin Press.	Out of print and not available within relevant timescale
Brown M, Rutherford D (1999) A re-appraisal of the role of the head of department in UK secondary schools. <i>Journal of Educational Administration</i> 37 : 229-242.	Does not focus on headteachers
Brown M, Rutherford D, Boyle B (2000) Leadership for school improvement: the role of the head of department in UK secondary schools. <i>School Effectiveness and School Improvement</i> 11 : 237-258.	Does not focus on headteachers
Busher H, Barker B (2001) The nub of leadership: managing the culture and policy contexts of educational organizations. Paper presented at the British Educational Research Association Annual Conference. University of Leeds: September 13-15.	Withdrawn by author because it is a working paper
Caldwell BJ (2000) Scenarios for leadership and abandonment in the transformation of schools. <i>School Effectiveness and School Improvement</i> 11 : 475-499.	Not based on empirical research
Cheng YC (1994) Principal's leadership as a critical factor for school performance: evidence from multi-levels of primary schools. <i>School Effectiveness and School Improvement</i> 5 : 299-317.	An earlier report of a study reported in a later paper that was included in the review
Coleman M (1994) Leadership in educational management. In: Bush T, West-Burnham J (1994) <i>The Principles of Educational Management</i> . Harlow: Longman.	Not based on empirical research

Excluded study	Reason for exclusion
Cotton C (2001) The role of the headteacher in school improvement: listening to the voice of practitioners. Paper presented at the British Educational Research Association Annual Conference. University of Leeds: September 13-15.	Focuses on headteacher's life histories and contains no outcomes data
Day C, Harris A, Hadfield M (1999) Leading schools in times of change. Paper presented at the European Conference on Educational Research. Lahti, Finland: September 22-25.	Not based on empirical research
Day C, Harris A, Hadfield M (2001) Grounding knowledge of schools in stakeholder realities: a multi-perspective study of effective school leaders. <i>School Leadership and Management</i> 21 : 19-42.	Not based on empirical research
Diggins PB (1997) Reflections on leadership characteristics necessary to develop and sustain learning school communities. <i>School Leadership and Management</i> 17 : 413-425.	Not based on empirical research
Dinham S, Cairney T, Craigie D, Wilson S (1995) School climate and leadership: research into three secondary schools. <i>Journal of Educational Administration</i> 33 : 36-58.	Does not consider relevant student outcome measures
Ferguson N, Earley P, Ousten J (1999) New heads, OFSTED inspections and the prospects for school improvement. <i>Educational Research</i> 41 : 241-249.	Does not consider relevant student outcome measures
Hallinger P, Heck R (1998) Exploring the principal's contribution to school effectiveness: 1980-1995. <i>School Effectiveness and School Improvement</i> 9 : 157-191.	Literature review - used to inform background
Hallinger P, Heck R (1999) Can leadership enhance school effectiveness? In: Bush T, Bell L, Bolam R, Glatter R, Ribbins P (eds) <i>Educational Management, Redefining Theory, Policy and Practice</i> . London: Paul Chapman Publishers.	Literature review - used to inform background
Hallinger P, Leithwood K (1999) Introduction: exploring the effect of principal leadership. <i>School Effectiveness and School Improvement</i> 5 : 206-218.	Literature review - used to inform background
Jackson D (2000) The school improvement journey: perspectives on leadership. <i>School Leadership and Management</i> 20 : 61-78.	Not based on empirical research
Leithwood K, Jantzi D (2000) Principal and teacher leadership effects: a replication. <i>School Leadership and Management</i> 20 : 415-434.	An earlier report of a study also reported in a later paper that was included in the review
Levacic R, Glover D, Bennett N, Crawford M (1999) Modern headship for the rationally managed school: combining cerebral and insightful; approaches. In: Bush T, Bell L, Bolam R, Glatter R, Ribbins P (eds) <i>Educational Management, Redefining Theory, Policy and Practice</i> . London: Paul Chapman Publishers.	Does not consider relevant student outcome measures

Excluded study	Reason for exclusion
Lingard R, Mills M (2001) Educational leadership as building school organizational capacity. Paper presented at the British Educational Research Association Annual Conference. University of Leeds: September 13-15.	Not available within time scale for this review
Russ J (1995) Collaborative management and School Improvement: research findings from 'improving schools' in England. <i>International Studies in Educational Administration</i> . 23 : 3-9.	Review of literature
Silins HC (1994) The relationship between transformational and transactional leadership and school improvement outcomes. <i>School Effectiveness and School Improvement</i> 5 : 272-298.	An earlier report of a study also reported in a later paper that was included in the review
Silins HC, Mulford W (2000) Leadership for organizational learning in Australian secondary schools. In: Leithwood K (ed) <i>Understanding Schools as Intelligent Systems</i> . Greenwich, CT, USA: JAI Press.	An earlier report of a study also reported in a later paper that was included in the review
Silins HC, Mulford W (2000) Towards an optimistic future: schools as learning organisations - effects on teacher leadership and student outcomes. Paper presented at the AARE-NZARE conference. Sydney, Australia: December 4-7.	An earlier report of a study also reported in a later paper that was included in the review
Silins HC, Mulford W (2001) Reframing schools: the case for system, teacher and student learning. Paper presented at the Learning Conference. Spetses, Greece: July 4-8.	An earlier report of a study also reported in a later paper that was included in the review
Silins HC, Mulford W, Zarins S (1999) Organisational learning in Australian High Schools: nature and practices. Paper presented at the AARE-NZARE conference. Melbourne, Australia: November 29-December 2.	An earlier report of a study also reported in a later paper that was included in the review
Thomas C, Fitzbugh-Walker A (1998) The role of the urban principal in school restructuring. <i>International Journal of Leadership in Education</i> 1 : 297-306.	Not available within timescale for this review
Southworth G (1997) Primary headship and leadership. In: Crawford M, Kydd L, Riches C (1997) <i>Leadership and Teams in Educational Management</i> . Buckingham: Open University Press.	Not based on empirical research
Southworth G (1999) <i>A TTA Project Report into Successful Heads of Small Primary Schools</i> . Reading University: School of Education.	Does not consider relevant outcomes

APPENDIX 6: Details of studies included in the in-depth review

Study	Type	How identified	Aims	Research design	Main findings
Bolam <i>et al.</i> (1993)	Descriptive study	Hand-search	To identify management processes and structures in individual schools, which staff of those schools recognised as effective practice	Likert type questionnaires administered to headteachers and a sample of teachers in 33 primary, 24 secondary and two special schools	There was agreement about the overall character of well-managed schools. Participative leadership mediated through teacher activity contributed effectively to student outcomes.
Cheng (2002)	Outcome evaluation	Hand-search	To investigate how principals' leadership is related to school performance in terms of multi-level indicators such as school's organisational characteristics, teachers' group-level and individual-level performances and students' attitudes	Questionnaires administered to randomly selected teachers in 190 Hong Kong primary schools and to randomly selected groups of year 6 students	Principals' leadership has a direct effect on organisational characteristics and teacher performance although it is teacher performance that has a direct effect on student performance.
Leithwood and Jantzi (1999)	Outcome evaluation	Electronic data-based - ERIC	To estimate the effects of family educational culture on organisational conditions and student engagement; to determine the proportion of variation in student engagement explained by school and classroom conditions; to identify the total effects of transformational leadership on organisational conditions and student engagement.	Questionnaires were administered: the 'Organisational Conditions and School Leadership Survey' (Form A and B) was completed by teachers and the 'Student Engagement and Family Educational Culture Survey' was completed by students. Data were aggregated to the school level using SPSS to calculate means, standard deviations, and reliability coefficients (Cronbach's alpha) for all the scales measuring the variables. A principal components	Transformational leadership had strong direct effects on school conditions, which in turn had strong direct effects on classroom conditions. Transformational leadership and school conditions explain 17% of the variation in classroom conditions, even though direct effects of transformational leadership on classroom conditions are negative and insignificant. Transformational leadership has a weak but statistically significant effect on student identification; its effects on student participation are not significant.

Study	Type	How identified	Aims	Research design	Main findings
				extraction with varimax rotation was used to analyse the seven school and classroom conditions to estimate the number of factors, and to assess extent to which our conceptual distinctions among the seven organisational conditions could be empirically verified. A path analytic technique (LISREL) was used to assess direct and indirect effects of transformational leadership on student engagement.	
Leitner (1994)	Outcome evaluation	Electronic database - ERIC	To identify principals' instructional management behaviours related to student achievement; to establish what principals in high achieving schools emphasise to influence teacher behaviour and instruction	Questionnaire administered to 27 school principals in at least their third year in post and 412 teachers in at least their second year in post. Instructional Management rating scale was used for principals. SES measured by numbers of pupils receiving free or reduced cost meals.	Principals in high achieving schools engaged more in behaviour associated with cultural linkage than principals in other schools. No significant positive relationship was found between principal instructional management and increased student learning which appeared to be influenced by environmental and organisational characteristics and SES.
Silins HC and Mulford W (2002)	Outcome evaluation	Hand-search	To extend present knowledge and understanding of 'what makes a difference to high school performance'	Data were collected from 2,503 teachers and their principals drawn from 96 secondary schools. The first phase of data-collection in 1997 included student surveys of 3,508 students at year 10 and in the final phase	A strong 'bottom up' approach exists in schools that are identified as learning organisations. Four dimensions define Australian high schools as learning organisations: trusting and collaborative climate; shared and monitored mission; taking initiatives and risks; and

Study	Type	How identified	Aims	Research design	Main findings
				<p>of data collection in 1999-2000 student outcome data were collected by surveying 1,805 year 12 students (age 11 to 16). The teacher/principal questionnaire focused on leadership and organisational learning. The student outcome measures were participation and engagement, and factors likely to affect these were taken to be family educational culture, SES and academic self-concept. Measures of student achievement and retention were aggregated for each school from public examination results and school completion rates. The evaluation investigated the relationship between variables retrospectively. Two hypothesised models were developed using path analysis with latent variables to investigate the nature and strength of all the relationships in the models.</p>	<p>professional development. Transformational leaders help establish the systems and structures that support 'bottom up' approaches and allow 'top down' approaches to succeed. Such principals are effective because they are, above all, people-centred. The closer school leaders' practices are to being described as transformational, the more active interest school leaders demonstrate in teaching and learning, the more distributed leadership is throughout the school community - in particular to teachers - the better the performance of that school in terms of student outcomes.</p>
Van de Grift and Houtveen	Outcome evaluation	Australian/UK Educational	To establish if there is a relationship between educational leadership and the output of primary schools;	The research is based on four projects carried out in different years. In 1989, the	The results for 1993 show a weak correlation between leadership and educational achievement in three

Study	Type	How identified	Aims	Research design	Main findings
(1999)		Index	to establish to what extent the changed context of Dutch [primary school] principals has affected their educational leadership and its effects on pupil achievement	sample was grade 5 or 7 teachers in 500 Dutch primary schools. Data were received from 250 schools. Seventy-three schools agreed to test their pupils for this research on the achievement in language, arithmetic and information processing. In 1993, the sample was grade 7 teachers in 386 Dutch primary schools. Data were received from teachers in 383 schools. In 174 of these, data were collected about grade 8 pupils' performance in language, arithmetic and information processing. In 1998, the sample was of teachers of grades 1 and 2, 3-5 and 6-8 (one of each per school) from 600 schools and data were received from 306 schools.	subjects (arithmetic, language and information processing). The findings provide weak evidence that principals have an effect on their schools and that this increased between 1989 and 1998 but better evidence is required, based on an experimental or quasi-experimental design.
Wiley SD (2001)	Outcome evaluation	Electronic database - ERIC	Not stated	Questionnaires were distributed to a sample of 2,205 maths teachers and 4,329 maths pupils, aged 11 to 16 and of mixed sex. The sample was drawn from the NELS: 88/NSES study using systematic random sampling. The student sample was 25%	The social organisation of teachers and administrators within schools can affect student achievement. Transformational leadership has an effect within a weak professional community but greater effects within a strong, professional community. However, a strong, professional community has little positive effect

Study	Type	How identified	Aims	Research design	Main findings
				<p>Black or Hispanic and those of limited English proficiency or educational disability were excluded. Data were collected through a self-completion report or diary and a student test validated in the NELS longitudinal study. A retrospective, cross-sectional analysis employed a multi-level model applied at organisational and individual levels.</p>	<p>without transformational leadership.</p>
<p>McMahon A (2001)</p>	<p>Descriptive study</p>	<p>Hand-search</p>	<p>Follow-up, after five years, to investigate 'how schools maintain and sustain momentum and success over the longer term' (p xix).</p>	<p>Case study on single site. Documents for contextual and outcome data. On-site observation. Interviews with three headteachers, nine teachers and support staff, a governor and a senior LEA representative.</p>	<p>In the five years since the first study, there was a 'downward spiral' reflected in a drop in SATs scores, pupil behaviour problems, poor staff communication and morale and an unfavourable inspection report. Inconsistent and poor leadership were the main causes. More stable leadership appeared to be leading to improvement.</p>