



Working with adults

How training and professional development activities impact on teaching assistants' classroom practice (1988-2006)

Review conducted by the Working with adults Review Group

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The results of this systematic review are available in four formats:

SUMMARY

Explains the purpose of the review and the main messages from the research evidence

REPORT

Describes the background and the findings of the review(s) but without full technical details of the methods used

TECHNICAL REPORT

Includes the background, main findings, and full technical details of the review

DATABASES

Access to codings describing each research study included in the review

These can be downloaded or accessed at <http://eppi.ioe.ac.uk/reel/>

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Abstract

What do we want to know?

The initial review question used to explore and map the research literature was:

What is the impact (both measured and perceived) of training on primary and secondary teaching assistants (TAs) and their ability to support pupils' learning and engagement?

Following mapping, a specific question for in-depth review was identified:

What is the impact of award-bearing training on paid primary and secondary teaching assistants (TAs) in mainstream schools?

Who wants to know and why?

Recent years have seen a large increase in the number of teaching assistants in UK classrooms, but their training has been unco-ordinated. Before this review, an overview of what was happening in terms of training was not accessible in one place. We synthesised outcomes in relation to what we could find about the training of TAs, thus offering policy-makers, teachers and teaching assistants an overview of provision.

What did we find?

The results of the present in-depth review point to one clear conclusion: TA training is patchy and its impact is little understood. Policy on training for TAs has not been co-ordinated, despite significant policy developments in recent years. Programmes exist in the UK, USA and elsewhere but these have grown in relatively unco-ordinated ways, despite initiatives such as the Specialist Teaching Assistant (STA) programme in the UK and No Child Left Behind (NCLB) criteria in the USA. Where available, training programmes (such as the STA programme in the UK) are reported to be effective in raising awareness and in developing TAs' confidence and subject knowledge, as well as their instructional skills. Exactly how such impacts are achieved is not clear. While training of TAs is needed, we require stronger evidence from new studies as to what forms of training work well and why.

What are the implications?

The degree to which training opportunities exist for TAs needs to be reviewed by national bodies, such as the DfES and TDA in the UK, to determine how TAs are prepared for their expected roles. There is an absence of pre-service training, patchy participation in induction training and unco-ordinated provision in both the UK and USA. Growth in the use of TAs has implications for teacher education

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policy so teachers are trained to work with paraprofessionals effectively. Well-designed studies are few in number so more evidence is required on how training prepares TAs to support learning and engagement, to take up their communicational roles in managing relationships and acting as a bridge between teachers and pupils, and supporting recent legislative initiatives such as No Child Left Behind (USA)/Every Child Matters (UK, DfES 2003a). More research is needed on the nature and quality of training for TAs, how TAs are trained to carry out their pedagogic roles, and what the impacts of such training are.

The focus of the final question was narrowed to the impacts of award-bearing training programmes on TAs and their contributions to learning and engagement. Sixteen studies meeting in-depth inclusion criteria were included in the in-depth review and these were then synthesised, bringing together the studies which offered an answer to the review question.

Where to find further information

CMS address

How did we get these results?

From electronic databases and full-text collections, we screened papers for relevance to the review question using the pre-established inclusion and exclusion criteria; 81 studies were included in the systematic map.

CHAPTER ONE

Background

1.1 Aims and rationale for current review

This review sought to explore studies that described and evaluated the results of training programmes for TAs. It is believed that support staff play a significant role in lightening teachers' workloads (DfES, 2002; Lee, 2002), and in supporting learning and increasing the level of pupil engagement (Cajkler et al., 2006; Howes et al., 2003).

This review is the third of three reviews focusing on the role and contributions of adults other than teachers in the classroom (see Cajkler et al., 2006, 2007). This is a particularly appropriate time for a review of training opportunities in the UK given recent policy initiatives (notably DfES, 2003a, b) and the increasing reliance on paraprofessional support staff in our schools. However, training for TAs has grown in a rather haphazard way in English-speaking countries. It is important therefore to ask the question: how are TAs prepared for their principal classroom role, which is to contribute to pupils' learning and engagement in the curriculum?

1.2 Definitional and conceptual issues

Our specific focus was on in-class support, generally referred to as teaching assistants (TAs) in the UK, and paraeducators or

paraprofessionals in the USA. Our focus was limited to work that relates to in-class support. By this, we meant staff who contribute directly to pupils' learning and engagement in the classroom: for example, one-to-one teaching, monitoring and supporting group work set by the teacher, contributing to inclusion of particular pupils. In the UK, such staff are called teaching assistants (TAs), learning support assistants (LSAs), classroom assistants (CAs), specialist teaching assistants (STAs), or learning supporters. Learning and engagement relate to involvement in the curriculum, in classroom activities and in activities, designed to promote or secure access to learning in the curriculum: that is, individuals' active engagement in formal learning processes (Cooper et al., 2006).

1.3 Review question

The following questions were used as the focus of the review, the first at the systematic map stage, the second for the in-depth review:

What is the impact (both measured and perceived) of training on primary and secondary teaching assistants (TAs) and their ability to support pupils' learning and engagement?

For the in-depth analysis of studies (reported in Chapter 4), the question was refined to the following question which was used to interrogate studies:

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What is the impact of award-bearing training on paid primary and secondary teaching assistants (TAs) in mainstream schools?

1.4 Policy and practice context

The review began from the perspective that the training of support staff is critical to successful educational provision in the UK (and elsewhere), given the increasing attention and importance attached to support staff contributions to pupils' learning and engagement. It was conducted to explore the current context of teaching assistant training in the UK and elsewhere, at a time when training policies for TAs are being reviewed in response to recent initiatives such as Every Child Matters (DfES, 2003a), the workforce remodelling taking place in UK schools (DfES, 2003b), and the introduction of higher level teaching assistants (HLTAs) in England.

Training for teaching assistants involves a range of opportunities, with both formal and/or informal outcomes. This review considers perceptions about the quality and impact of training and development programmes, formal and informal, short and long-term, accredited and non-accredited, looking through the eyes of teachers, headteachers and principally teaching assistants. Where possible, the review identified the impact of training and development activities on TAs and on their ability to support pupils' learning and engagement.

In the past, TAs may have been more frequently engaged in clerical support activities for teachers. However, their role has become one much more focused on learning support in direct interactions with single pupils or groups of pupils. This trend for TAs to be more involved in instruction or teaching is reflected in the use of terms such as 'instructional skills' in the USA, which is understood to mean the ability to offer one-to-one support, group support, explanations and guidance; and the ability to engage in teaching episodes guided by teacher input and supervision of pupils working on tasks.

1.5 Research context

Some research has been conducted in the UK into ways in which teaching assistants are trained: for example, Dew-Hughes et al. (1998), Farrell et al. (1999), Russell et al. (2005), Swann and Loxley (1998) and Terrell et al. (2004). Farrell et al., who investigated practice in both primary and secondary schools, concluded that more and better training for TAs was required.

Russell et al. (2005) surveyed the views of 340 years 4-6 TAs and concluded (p 175) rather gloomily that changes to the TA role had been unsystematic and had not connected with training or indeed with their contractual conditions. Large numbers of TAs remained untrained (p 188). Where training had been attended, TAs reported positive effects (p 182), but many TAs remain untrained for what Russell et al. term 'their pedagogic role of supporting pupils' learning' (p 188) as at least 25% did not attend training. It appeared from studies that TA training was patchy and that take-up was limited; however, the issue was becoming a priority for further development at least on the part of researchers (Kerry, 2005; Russell et al., 2005).

In the USA, Gerber et al. (2001) also warned that TAs have very limited preparation for their roles. French (2003, p 9) advised that 'paraeducators continue to be hired for the job with no preparation' (2003: 9). Many teaching assistants are still likely to depend on the training given to them on the job by their classroom teachers.

Nevertheless, in the USA, informative reviews about training of support staff have been undertaken, notably by French (2003). A glance at the titles in French's review (see Appendix 1.3 of the Technical Report) suggests that TAs and teachers have been consulted about the effects of TA training: for example, Long et al. (1994), Passaro et al. (1991), and Riggs and Mueller (2001).

While general perceptions appeared to be that the training of teaching assistants was at best

patchy, there was some evidence of positive impact where training existed (Hutchings, 1997; Russell et al., 2005; Swann and Loxley, 1998; Terrell et al., 2004). The Review Group concluded that this area needed further exploration and a systematic literature review was justified at this important time in the development of teaching assistants' roles and responsibilities in the UK.

1.6 Authors, funders and other users of the review

The review was funded by the TDA, managed by the EPPI-Centre Review Group and supported in kind by the University of Leicester, Bishop Grosseteste University College, Lincoln, and Newman College, Birmingham. The intended audience included policy-planners, the Training and Development Agency for Schools (TDA), trainers of TAs in local authorities and in universities, school managers and TAs themselves.

The review was conducted at the School of Education, University of Leicester, with the principal participants in the Review Group being Wasyl Cajkler, Dr Geoff Tennant and Dr Yonca Tiknaz. Dr Rosie Sage, University of Leicester, Claire Taylor of Bishop Grosseteste University College, Lincoln, and Professor Stan Tucker of Newman College, Birmingham were members of the Review Group. In addition, the practitioner perspective was represented by an advisory user group that included trainers, headteachers, teachers, advisers and teaching assistants.

CHAPTER TWO

Methods of the review

2.1 User involvement (approach and rationale)

The Review was informed by consultation with a network of practitioners involved in training or managing teaching assistants. The Advisory Group also included a TA member. This Group met to offer perspectives to inform and guide the review at several points, including the final question which they advised should:

- a. seek to evaluate the impact of training events on TAs and their work with pupils
- b. have its principal focus on paid staff

In addition, a focus group of 12 TAs, enrolled in the STA course at the University of Leicester, was asked to respond to the findings. The final report has been circulated to all users who will in turn distribute copies to members of their organisations (for example, officers and trainers of Social Emotional Behavioural Difficulties Association, SEBDA).

2.2 Review methods

The focus of the review, the inclusion criteria, the mapping and the in-depth review were all informed by consultation with the Advisory Group in a series of meetings and in discussion with EPPI-Centre and TDA staff. The review followed the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-

Centre) guidelines. Systematic reviewing tools for conducting a systematic review (EPPI-Centre, 2003a, 2003b, 2003c and 2003d) were employed throughout. These are described in full in Chapter 2 of the technical report.

Reports were identified from specified electronic bibliographic databases, handsearching of specified journals, citations in reference lists from specified systematic and non-systematic reviews, and personal contacts. For a study to be included in the map, it had to contain description and evaluation of the training of TAs for classroom support work and the meet the criteria in section 2.3.

2.3 Inclusion/exclusion criteria

Exclusion criteria (systematic map)

Studies were not included if they were:

X1 = NOT about teaching assistants (as defined in the protocol)

X2 = NOT about training of teaching assistants for activities related to learning and engagement (including SEN/EAL/Numeracy/Literacy/Subject support work and NOT about training of teaching assistants to become teachers)

X3 = NOT about teaching assistants working in Foundation Stage to KS5 (4-19)

X4 = NOT about the impact of training or perceptions of TAs' training on TAs' classroom practice and contributions to pupils' learning and engagement

X5 = NOT primary empirical research studies

X6 = NOT about mainstream schools (e.g. set in special schools)

X7 = NOT published in the period 1988-2006

X8 = NOT published in English

X9 = Theses/dissertations

XGAZ =Newspaper articles

The 81 studies, found following application of these criteria, were then described using the EPPI-Centre's Core Keywording Strategy (EPPI-Centre, 2003a) and review-specific keywords agreed by the Review Group. After creating the map, the Review Group met in consultation with the Advisory Group to agree the focus of the final question.

2.4 In-depth review

Studies meeting in-depth inclusion criteria (see Appendix 2.1 in the full technical report or section 4.1 in this report) were included in the in-depth review. These were analysed in depth by pairs of reviewers, using the EPPI-Centre's Data-Extraction Tool (EPPI-Centre, 2003d). The EPPI-Centre weights of evidence (WoE) were used to ascribe overall quality and relevance to the findings and conclusions of different studies. The data was then synthesised, bringing together the studies which offered an answer to the review question.

CHAPTER THREE

What research was found?

The 81 studies in the map were keyworded. The keywording exercise demonstrated that the quality of reporting in terms of detail was somewhat variable: many of the studies were flawed by omission of important details, including how many TAs had been surveyed (17 studies). Nevertheless, the studies are informative and we were able to come to conclusions about the following characteristics:

- Studies came from three countries (Australia, 7; UK, 27; USA; 47).
- TAs had a voice in 54 studies.
- Teachers expressed views in 32.
- Training events were offered to the staff of 54 primary schools, 29 secondary schools and 14 nurseries.
- Training usually took place in the workplace (47 sites), with some in higher education institutions and on local authority sites.
- Higher education institutions (HEIs) were the training providers in 36 studies, frequently as part of a research project.

Many of the courses were brief:

- 19 studies described programmes that lasted a day or less.
- 13 studies had 2-5 day events

- Only two of the courses were pre-service.

Huge variation was found in the extent to which TAs were given paid or unpaid release from school to attend courses, with eight programmes conducted exclusively in the TAs' own time.

Training programmes focused on the following pedagogic or curriculum areas:

- teaching or instructional skills (46)
- inclusive practice (21)
- literacy (20)
- special educational needs practice (18)
- behaviour management (18)
- teamwork (17)
- numeracy (8)

There appears to be very limited published evaluation of the training available but some of the included studies reported on usually positive outcomes following training in relation to:

- understanding how to do the job (31)
- self-esteem/confidence levels (29) (usually reported to be improving)

- instructional skills (25)
- pupil attainment (25)
- TAs' subject knowledge (20)
- job satisfaction (19)
- pupils' social skills (15)
- TA management of behaviour (12)
- effective teamwork (12)

One of the significant weaknesses in the studies was lack of contextual clarity. For example, studies were frequently unclear as to whether the courses reported on were award-bearing, with 30 to 36 studies focusing on award-bearing opportunities and at least 45 of the programmes involving no formal awards. There appears to be no clear awards framework for TAs in the UK, USA or Australia.

Overall, little evidence was found of nationally co-ordinated practice in the UK, with the exception of higher level teaching assistant (HLTA) provision (which is more about a minority acquiring a status than about 'skilling' the majority) and the locally taught voluntary DfES induction programmes. An attempt was made in the 1990s to develop the STA course across England, but support for this has waned in recent years. Nevertheless, there appear to be opportunities for in-service provision, although provision and uptake does not appear to be universal and many TAs reported dependence on incidental on-the-job training, or advice from colleagues. A similar lack of co-ordination appeared to be the case in the USA. Pre-entry training seems to be an undeveloped area.

Few studies were located that sought to measure impact through quantitative data, such as student results or observations of TA behaviours.

CHAPTER FOUR

What were the findings of the studies?

4.1 How studies were selected for the in-depth review

The following inclusion criteria were applied to the 81 studies in the map, leading to a set of 16 studies for in-depth analysis:

For inclusion in the in-depth review, the TAs' training, reported in the study, had to be:

EX1: award-bearing training (accredited in some way, leading to an award)

EX2: for paid teaching assistants

EX3: for TAs in mainstream primary or secondary schools only

The studies (articles/reports/conference papers) had to:

EX4: include a report of an evaluation of the TAs' training programme with data or outcomes reported (the latter could be perceptions of participants about impact on them)

EX5: be a primary study, not a study reporting on previously conducted studies

This inclusion process resulted in 16 studies being identified for inclusion in the in-depth review.

4.2 Further details of studies included in the in-depth review

Sixteen studies were included for the in-depth review of training for TAs in mainstream school settings in the UK, USA and Australia. Unfortunately, the quality of studies was not high. Eight of the studies were of low-medium or low weight of evidence (WoE) and only one could be classified as having high weight, as indicated in Table 4.1.

This confirms that the evaluation of training by researchers has been rather limited and somewhat loosely focused. However, in all the studies (whether of high, medium or lower weight), the study participants' perceived that training of TAs is useful. Of the UK studies, the three key TA training programmes identified were the specialist teaching assistant certificate (STAC), foundation degree courses leading to honours (FdA/BA) and higher level teaching assistant (HLTA) courses.

4.3 Summary of the results of the synthesis

4.3.1 How programmes impact directly on TAs

When considering the principal direct impacts on the TA, the following issues were explored: job satisfaction, motivation, confidence and

Table 4.1 Details of studies included in the in-depth review

Studies included for in-depth analysis	Overall weight of evidence	Location
Swann and Loxley (1998)	High	UK
Edwards and Clemson (1997)	Medium	UK
Giangreco et al. (2003)	Medium	USA
Gittman and Berger (1997)	Medium	USA
Pye Tait (2006)	Medium	UK
Romano (1999)	Medium	USA
Hutchings (1997)	Medium-low	UK
O'Keefe and Tait (2002)*	Medium-low	UK
Blalock et al. (1992)	Low medium	USA
Edmond (2003)	Low medium	UK
Ryall and Goddard (2003)	Low medium	UK
Wilkins (2004)	Low medium	UK
Broadbent and Burgess (2003)	Low	AUS
Forbush and Morgan (2004)	Low	USA
Sack and McLean (1997)	Low	USA
Terrell et al. (2004)	Low	UK

self-esteem of TAs; communication and verbal skills; academic skills; reflection; and teamwork and subject knowledge. The following impacts were identified:

- STAC courses led to reported changes in TA job satisfaction, subject knowledge, motivation, confidence, self-esteem, teamwork (three studies: high, medium, medium-low WoE).
- FdA/BA programmes led to reported impact on job satisfaction, levels of reflection by TAs and subject knowledge (three studies: one medium-low, one low-medium, one low).
- HLTA training initiatives were perceived to impact on confidence levels, subject knowledge and reflection (one medium WoE study only).
- US studies claimed direct impacts on TAs in the areas of job satisfaction, motivation, confidence and self-esteem, teamwork and subject knowledge (three studies: medium WoE).

A recurrent perception in UK-based studies was that for training programmes to work well,

the headteacher's support was crucial, along with the willingness of teachers to engage in teamwork and allow TAs greater participation in teaching, learning and assessment.

4.3.2 How programmes help TAs to support pupils' learning and engagement

Studies yielded relatively little about the impact on students and their learning. We explored the data for impacts on pupils' academic progress, TAs' instructional skills, understanding students better, TAs' use of formative assessment, inclusion of pupils, TA management of behaviour, promotion and management of pupils' interaction. In general, the impacts on students could only be indirectly gleaned, with very little on direct impact on their learning, but the following were identified:

- STA training is perceived to impact on TAs' instructional skills, their skills in assessment of pupils, their ability to contribute to inclusion and pupil interaction (three studies: high, medium, medium-low WoE).
- FdA/BA programmes are perceived to lead

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- to changes in instructional skills, skills of assessment of pupils; understanding pupils better; and inclusion practice (three studies: one medium-low, one low-medium and one low WoE).
- Participation in teaching activities following the STAC training depends on a range of contextual factors, including teacher 'preparedness' to include the TA and one study high WoE study (Swann and Loxley, 1998) reported that TA participation had not risen following training.
 - HLTA initiatives were perceived to have little apparent impact on TAs' instructional skills, although there was preparation for the teaching of whole classes; practice in behaviour management and inclusion were said to be enhanced, although more strategies would have been welcome on behaviour management.
 - US studies claimed impacts in the development of paraeducator instructional skills, inclusion practice, behaviour management and their ability to understand students better.
 - The US programmes aimed to develop similar skills to those identified in UK studies, but with more explicit focus on issues relating to inclusion, and including students with disabilities, especially supporting learners without hovering or shielding learners from integration.
 - Dedicated short courses targeting a particular issue were perceived as having a significant impact.

CHAPTER FIVE

Implications, or 'What does this mean?'

5.1 Strengths and limitations of this systematic review

Strengths

The disciplines of screening - using inclusion/exclusion criteria, keywording, data extraction tools and EPPI-Reviewer - enabled reviewers to focus very firmly on the issue of training. The Review Group was able to identify a range of provision for teaching assistants that had been subjected to some form of evaluation and bring these together in one report. The Group was able to identify patterns of training in three major contexts (UK, USA and Australia). From these processes, it was concluded that training programmes are perceived by a variety of stakeholders to be welcome, relevant and effective.

Limitations

Several studies described training programmes and reported on evaluations but gave quite limited attention to impacts. As a result, the number of programmes covered is quite limited, implying that a vast amount of provision has not been explored. Longitudinal studies were not found, so evidence of impact is often impressionistic, based on participants' reports, teacher or headteacher perceptions. The studies included in the review did not use research designs that could provide a robust answer to questions about the impact of TA training. Within this

context, the quality of reporting of research design in the studies examined was poor. In addition, there was difficulty in assessing whether studies reported on award-bearing provision or on general programmes. On some occasions, it was necessary to give the 'benefit of the doubt' and infer information about the nature of the training and the approach to the research. Overall, only one (Swann and Loxley, 1998) provided sufficient information on the analytical frameworks that were used to generate research conclusions to warrant a high weight of evidence in this respect; this was found to be the particular weakness of the studies reviewed in the in-depth study.

5.2 Implications for policy and practice

Interpretation and application of the results of this review requires further work by different users of research, but initial implications include the need to review the following:

- the degree to which training opportunities exist for TAs
- how we determine how well TAs are prepared for their roles
- the apparent absence of pre-service training (virtually no studies in the map)
- the extent to which TAs should be trained

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before taking up posts

- why induction training is not obligatory for all new TAs

Awards have developed for TAs, but have not been nationally or federally co-ordinated. The emergence of a variety of awards for TAs has implications for:

- the future structure of the workforce
- managers in schools, who may seek TAs with higher levels of qualification than has previously been the case
- professional development policies in schools
- pay policy

The DfES (2004) has spelled out its vision for the training of support staff consequent upon the introduction of Every Child Matters, with significant roles now given to the Learning and Skills Council and the Training and Development Agency for Schools. The latter has commissioned an evaluation of the induction programme (DfES, 2000) from the University of Luton (TDA, 2007). The report confirmed that TAs were positive about their experiences of induction training, that the short courses offered by local authorities led to TAs feeling more confident and enjoying greater self-esteem (p. 32) and teachers feeling that in-class support had improved. There was, however, little mention of direct impact on pupils (p 34) again in keeping with our findings. Further policy developments are awaited.

There are also implications for teacher education policy:

- the need to prepare teachers to manage paraprofessional staff effectively
- provision of sufficient autonomy in the classroom for TAs to develop practice following training

Study of impacts in the map and the in-depth synthesis suggest that training may be effective

in raising awareness, and in developing TAs' confidence and subject knowledge, as well as their instructional skills. Exactly how such impacts are achieved is not clear. More studies using rigorous research designs are needed. Although it is agreed that training of TAs is needed, stronger evidence is required as to what forms of training work well and why. Many programmes of study are offered to TAs (e.g. college courses in the UK - CACHE awards, BTEC awards, GNVQs and NVQs) and evaluations of these do not appear to have found their way into the literature.

The governments of the UK, USA and Australia are taking greater interest and beginning to mandate standards and requirements, but there are as yet no national programmes for all TAs, despite developments such as national standards in the USA associated with the 2001 'No Child Left Behind Act' (Schmidt and Greenough, 2002; Wall et al., 2005).

Guidance is awaited in the UK as the TDA is conducting a review of induction training provision for TAs in England. There are emerging requirements for more highly qualified paraeducators, notably the HLTA in the UK and programmes that meet the criteria for NCLB and Early Childhood requirements in the US. But, do these address the needs of classroom-based TAs, working with groups of children to support learning and teaching?

Given the policy of Every Child Matters (DfES, 2003a), the training of TAs has been acknowledged as critical to the success of the programme (DfES, 2004). It is essential that lessons are learned from this review, to make sure that future programmes prepare TAs to support students' learning and engagement. Success in this depends not just on TA commitment but also on the willingness of managers and teachers to take account of, and accommodate, trained TAs so that pupils are not hovered over and not left behind. Such achievement will enhance TA job satisfaction, motivation and self-esteem.

5.3 Implications for research

Well-designed studies are few in number as evidenced by the comparatively low WoEs given to our sample. Further evidence is required on the following:

- how training prepares TAs for their contributions pupils' learning and engagement
- how TAs are prepared for their communicational roles in managing relationships and acting as a bridge between teachers and pupils
- what kinds of provision would address the current legislative frameworks (e.g. Every Child Matters / No Child left Behind)

References

6.1 Studies included in the map and synthesis

Studies selected for in-depth review are marked with asterisks (*).

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Appendix 1.1: Authorship of this review

This work is a report of a systematic review conducted by the English Review Group.

The authors of this report are:

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Dr Yonca Tiknaz, University of Leicester
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They conducted the review with the benefit of active participation from the members of the review group.

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Conflict of interest

In the conduct of this review, we have worked within the EPPI-Centre guidelines, methodology and quality-assurance procedures for systematic reviewing. While we consulted the Training and Development Agency for Schools (TDA) about the review and were consulted by them, we have worked in an independent way. There may have been occasions when our own educational experience and understandings impacted on our judgments. However, the system of pairs of reviewers arriving at independent judgements attempts to limit bias as much as possible. There are no conflicts of interest for any members of the group.

Acknowledgements

The Review Group undertook the project described in this report in accordance with EPPI-Centre Guidelines. The study was conducted with funding from the Training and Development Agency for Schools (TDA), managed by the EPPI-Centre and with additional support from the University of Leicester, Newman College, Birmingham and Bishop Grosseteste University College, Lincoln. A significant amount of unfunded additional time was offered by Review Group and Advisory Group members in order to facilitate the completion of the project. We are very grateful for this goodwill. We wish to thank the EPPI-Centre and the TDA staff members for their help with the review and for their work in formatting this publication. In particular, we wish to acknowledge the contribution of Mukdarut Bangpan, whose guidance and patience have been invaluable. We are grateful to the TDA for funding the project and to the University of Leicester for its administrative and academic support. In particular, we would like to thank Roy Kirk, former Librarian of the School of Education, University of Leicester, and Fiona Belton, for her secretarial support.

Appendix 1.2: The standard EPPI-Centre systematic review process

What is a systematic review?

A systematic review is a piece of research following standard methods and stages. A review seeks to bring together and 'pool' the findings of primary research to answer a particular review question, taking steps to reduce hidden bias and 'error' at all stages of the review. The review process is designed to ensure that the product is accountable, replicable, updateable and sustainable. The systematic review approach can be used to answer any kind of review question. Clarity is needed about the question, why it is being asked and by whom, and how it will be answered. The review is carried out by a Review Team / Review Group. EPPI-Centre staff provide training, support and quality assurance to the Review Team.

Stages and procedures in a standard EPPI-Centre review

- Formulate review question and develop protocol.
 - Define studies to be included with inclusion criteria.
 - Search for studies - a systematic search strategy, including multiple sources, is used.
 - Screen studies for inclusion
 - Inclusion criteria should be specified in the review protocol.
 - All identified studies should be screened against the inclusion criteria.
 - The results of screening (number of studies excluded under each criterion) should be reported.
 - Describe studies (keywording and/or in-depth data extraction)
 - Bibliographic and review management data on individual studies
 - Descriptive information on each study
 - The results or findings of each study
 - Information necessary to assess the quality of the individual studies
- At this stage, the review question may be further focused and additional inclusion criteria applied to select studies for an 'in-depth' review.
- Assess study quality (and relevance)
 - A judgement is made by the Review Team about the quality and relevance of studies included in the review.
 - The criteria used to make such judgements should be transparent and

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systematically applied.

- Synthesise findings
 - The results of individual studies are brought together to answer the review question(s).
 - A variety of approaches can be used to synthesise the results. The approach used should be appropriate to the review question and studies in the review.
 - The Review Team interprets the findings and draw conclusions and implications from them.

Quality assurance

Quality assurance (QA) can check the execution of the methods of the review, just as in primary research, for example, through:

- Internal QA: individual reviewer competence; moderation; double coding
- External QA: audit/editorial process; moderation; double coding
- Peer referee of protocol; draft report; published report feedback
- Editorial function for report: by review specialist; peer review; non-peer review

The results of this systematic review are available in four formats:

SUMMARY

Explains the purpose of the review and the main messages from the research evidence

REPORT

Describes the background and the findings of the review(s) but without full technical details of the methods used

**TECHNICAL
REPORT**

Includes the background, main findings, and full technical details of the review

DATABASES

Access to codings describing each research study included in the review

These can be downloaded or accessed at <http://eppi.ioe.ac.uk/reel/>

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The EPPI-Centre was established in 1993 to address the need for a systematic approach to the organisation and review of evidence-based work on social interventions. The work and publications of the Centre engage health and education policy makers, practitioners and service users in discussions about how researchers can make their work more relevant and how to use research findings.

Founded in 1990, the Social Science Research Unit (SSRU) is based at the Institute of Education, University of London. Our mission is to engage in and otherwise promote rigorous, ethical and participative social research as well as to support evidence-informed public policy and practice across a range of domains including education, health and welfare, guided by a concern for human rights, social justice and the development of human potential.

The views expressed in this work are those of the authors and do not necessarily reflect the views of the funder. All errors and omissions remain those of the authors.

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