

Hemsley-Brown, J.V. and Sharp, C. (2004). 'The use of research to improve professional practice: a systematic review of the literature', *Oxford Review of Education*, 29, 4 pp. 449-470. (21p)

The use of research to improve professional practice: a systematic review of the literature

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Abstract

In a keynote address to the Teacher Training Agency Annual Conference, Professor David Hargreaves (1996b) suggested that teaching could become an evidence-based profession if educational researchers were made more accountable to teachers. This systematic literature review set out to explore: how teachers use research; which features of research encourage teachers to use research findings in their own practice; whether medical practitioners make greater use of research findings than teachers; and approaches to dissemination.

Two key ideas emerge from this review. First, there appear to be common barriers to research use in both medicine and in education. Findings suggest that there is a need to create a culture in the public sector which supports and values research. There are, however, a number of factors, which appear to be more specific to the education field. Key differences in the way that research knowledge is constructed in the social sciences has led to researchers being challenged about their findings, particularly in relation to the context, generalisability and validity of the research. For these reasons the development of communication networks, links between researchers and practitioners, and greater involvement of practitioners in the research process, have emerged as strategies for

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improving research impact.

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Introduction

In a keynote address to the Teacher Training Agency Annual Conference, Professor David Hargreaves (1996b) prompted considerable debate by comparing the teaching profession unfavourably to that of medicine (Foster, 1997; Gipps, 1997; Hammersley, 1997; McIntyre, 1997; Coe & Fitzgibbon, 1998; Foster & Hammersley, 1998; Ruddock & McIntyre, 1998; Tooley & Darby, 1998). Hargreaves argued that in medicine, professional decisions, such as which treatment to prescribe for a particular condition, are based on the best available research evidence. This ensures that patients receive the most appropriate treatment, with the greatest likelihood of success.

In contrast, teachers rarely utilise research in their decisions about what is best for their pupils. Hargreaves suggested that teaching could become an evidence-based profession if educational researchers were made more accountable to teachers. This could be achieved through a coordinated approach to research, which would target research on what really counts (especially pedagogy). He also called for more energy to be devoted to disseminating research findings more effectively.

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In 2001, the National Foundation for Educational Research (NFER) began work on a research project designed to illuminate some of these issues. The research formed part of the Local Government Association (LGA) research programme. The project began with a review of the available literature, which was designed to inform the project's subsequent empirical research. This article outlines the approach and findings from the literature review.

The review set out to answer the following questions about research utilisation and the dissemination of findings:

- How do local authority officers, heads and teachers use research findings for school improvement?
- Which features of research encourage teachers to use research findings in their own practice?
- What role do opinion-leaders, diffusion networks and change agents play in the dissemination and adoption of ideas for school improvement?

One further research question was added at a later stage (see below).

About systematic review

A systematic approach to literature review attempts to identify the best available evidence to answer specific questions. Such an approach prioritises evidence from empirical studies that have the most appropriate design and are of the highest quality. Systematic review has its origins in the medical field and has been developed through the Cochrane Collaboration (Sheldon & Chalmers, 1994; Booth, 2001). Recently, some of

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the features of this approach have been adopted in the social sciences, including education (e.g. Evidence for Policy and Practice Information Co-ordinating Centre (EPPI-Centre)). Evans & Benefield (2001) have identified some of the key features of a systematic review within education. The approach adopted for this review set out to:

- address explicit research questions
- document the methods used for literature searching
- carry out exhaustive searches
- establish explicit criteria for assessing the quality of studies
- establish explicit criteria for including or excluding studies, based on the scope of the review
- adopt a consistent approach to combining information across different studies
- produce a clear statement of the findings of the review.

Methodology

The systematic approach entailed extensive searches of relevant education and medical databases, namely: AEI; BEI; BOPCAS; CERUK database; ERIC; PSYCINFO; MedLine; Web of Science and the NFER Library's own bibliographic databases. Hand searches, and internet searches were also carried out. The searches were extended beyond education to include medicine for three reasons. First, because Hargreaves (1996b) had drawn comparisons between the teaching and medical professions, it seemed appropriate to consider empirical studies on research utilisation from the medical field. Second, it was anticipated that research utilisation would be a well-established research topic in the field of medicine, and that searches in this field would add useful information

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to the potentially smaller pool of studies that would be found in education alone. Third, initial searches identified three studies that set out to compare the behaviour and attitudes of different professional groups, including professionals in education alongside those in medicine and other fields (e.g. Beard & Williams 1992; Latham, 1993; Hannan *et al.*, 2000). The decision to include studies from the medical field enabled the review to address a further research question:

- Do medical practitioners make greater use of research findings than heads and teachers and if so, why?

Searches of electronic and on-line databases using thesaurus search terms were carried out and tracked during the search process. The intention was to ensure that, as far as possible, all literature in the field was identified, while keeping the focus on literature of greatest pertinence to the research questions.

The search was limited to publications between 1988 (the year of the Education Reform Act) and 2001. This starting date was chosen because 1988 marked a major change in the educational landscape of England and Wales, particularly in respect of the relative power and responsibilities of local authorities and schools. The review considered English language reports from the UK and in other countries, including the United States (US), Canada, Australia and Europe. Published journal articles and unpublished conference papers reporting on empirical research from the fields of education, nursing and medicine were included, but theses were excluded.

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The searches for the review of literature resulted in 183 papers (empirical, theoretical and opinion papers) being selected for further scrutiny from over 5,000 citations. All searches were documented and requests for literature (including those identified from citations in articles) were tracked using a database. As each publication was received, it was scrutinised for its pertinence to the remit of the review.

After strict application of the search parameters, 21 empirical research publications (articles, papers, and books) were selected for detailed study. In addition, the review included one influential theoretical publication pertinent to the research objectives (Rogers, 1995) which drew on a wide range of empirical research studies carried out by the author and others. Non-research papers were considered separately. Their main contentions were documented in order to consider the prevailing arguments in relation to the evidence base.

Each piece of empirical research was subjected to a thorough review, using a standard framework to extract key information about the purpose, design, sample, methodology, findings and implications of the study. The work was carried out by the main author of this paper, but the two authors independently reviewed the first piece in order to establish a common understanding of the precise nature of the information required and to provide consistency of approach for later analysis.

The summaries of each study were then analysed to build up an evidence-base in relation to each of the review questions. In doing so, the researchers used a best evidence

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approach, prioritising the findings from the best designed and most authoritative studies (Slavin, 1986). Criteria used to determine the priority accorded to research findings included: the pertinence of the research to the review; the appropriateness of the study design to address each of the review questions; the quality of the research in terms of its design, conduct and reporting; and the reviewer's judgement of the validity, reliability and generalisability of the findings.

How local authority officers, heads and teachers use research findings for school improvement

The review identified few empirical studies focusing on the use of research findings for school improvement. However, there were a small number of studies that investigated related areas, and the main findings are presented below.

Local authority officers' role in the use of research and performance data

The literature searches were unable to identify any empirical studies that concentrated specifically on how local authorities officers use research findings for school improvement. Nevertheless, local authorities are involved in a range of school improvement initiatives (DfEE, 2001), and a number of empirical studies have considered the use of pupil performance data for this purpose (e.g. Hendy, 1999; Lee & Scanlon, 1999; Saunders & Rudd, 1999; Demie, 2001; Pavlou & Bennett, 2001; Rudd & Davies, 2002). The main findings from these studies indicated that the majority of LEAs now have an identifiable unit to undertake research and statistical data collection. However, there are conceptual, statistical and ethical challenges associated with data use,

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especially when data are used to measure school performance and school improvement (Saunders & Rudd, 1999).

Use of research findings by headteachers and school principals

The searches identified two research papers (Saha *et al.*, 1995; Biddle & Saha, 2000), reporting on a study undertaken in 1991, on the awareness and use of research findings by school principals (headteachers) in America and Australia. The key issues addressed were whether principals believed that research had any value in their day-to-day decisions and which factors might explain their attitudes to the value of educational research knowledge.

The authors provide qualitative and quantitative data to support their claim that principals held a generally positive view of research, and tended to use research in their decision-making. They described the 'typical' principal in the study as judging research knowledge to be valuable. Principals considered themselves to be regular, thoughtful users of research knowledge and stated that they learned from that knowledge. The 'typical' principal also argued that although research knowledge may be flawed, they believed it to be relevant. Nevertheless, the authors suggest that although principals' research knowledge was broad, it was shallow. They conclude that post-graduate training contributed towards raising a principal's regard for educational research knowledge even though he or she might consider such research to be problematic.

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Use of research findings by teachers

As a result of the search, four empirical studies were identified that focused on teachers' awareness and understanding of research literature (Latham, 1993; Zeuli & Tiezzi, 1993; Zeuli, 1994; Shkedi, 1998; Hannan *et al.*, 2000).

The most pertinent evidence for this review is provided by Zeuli (1994). This empirical study specifically concentrated on the way teachers *use* research findings. The study was carried out in Michigan in the United States with a convenience sample of thirteen primary, middle and secondary school teachers, and aimed to find out how teachers read and respond to educational research. The researcher provides a summary of teachers' self-descriptions of how they read research, and how they believe their research knowledge influenced their teaching. Teachers were given the research articles, and a list of questions they would be asked, during the interview (i.e. teachers had not read the research articles in advance).

Zeuli (1994) argues that teachers only consider an article or find it credible when it matches their personal experience. The researcher found that some teachers believed research should exclusively identify strategies and techniques that could have a *direct* impact on their teaching, and these teachers judged the study's merits on the basis of whether the findings can be translated into procedures that work in classrooms. Other teachers believed that research could have an *indirect* impact on their teaching and had the potential to expand their understanding of teaching. These teachers were concerned with the concepts and the claims the authors proposed, and how each study's conclusions

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were supported by evidence. Zeuli argues, however, that most of the teachers responded more positively to credible concrete cases or examples, and teachers needed more sustained opportunities to link their understanding of research to their knowledge of teaching.

Features of research that encourage teachers to use the findings in their own practice

The searches identified a number of opinion and discussion papers that raise issues about the impact of educational research on practice (Shavelson, 1988; Shavelson & Berliner, 1988; Bracey, 1989; Biddle, 1996; Budge, 1996; Hargreaves, 1996a; Scheerens & Creemers, 1996; Hegarty, 1997; Kennedy, 1997; Hargreaves, 1999; Blunkett, 2000; Counsell *et al.*, 2000; Davies, 2000; Edwards, 2000; Hagger & McIntyre, 2000; Mortimore, 2000). These papers concentrated on the extent to which educational research contributes to practice, what research is expected to achieve and how researchers might help teachers to make use of research. In general, authors put forward the view that there is a need for better professional knowledge about the management of schools, and effective teaching and learning (e.g. Biddle, 1996; Hargreaves, 1996b; Hagger & McIntyre, 2000) and there is a lack of good, well-founded research evidence into key policy issues (Bracey, 1989; Hargreaves, 1996b, 1999; Blunkett, 2000; Edwards, 2000).

The subject of facilitators (and barriers) to the use of research has also been the focus of much speculation and discussion in education (see for example: Fleming, 1988; Tobin,

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1988; Rauch, 1991; Bassey, 1992; Turnbull, 1992; Malouf & Schiller, 1995; MacColl & White, 1996; Staller & Kirk, 1998; Desforges, 2000a and b; Landry *et al.*, 2000; Tierney, 2000). Authors of opinion pieces suggest that research can have an impact on practice as long as teachers are involved in the identification of problems and are provided with the context in which they can learn the strategies for improvement. Authors recommend that: research findings should be more accessible; the reward structures should be re-framed (i.e. academics should be rewarded for dissemination to practitioners); alternative publishing venues should be developed to target users; and academic jargon should be reduced. Authors of opinion papers frequently argue that teachers and policy-makers do learn from research but research utilisation works best in settings of collaboration and mutual support. They conclude that effective programmes for change should be utilitarian, inspirational, provide immediate payoffs and meet local needs.

The searches also revealed a number of discussion and opinion papers relating to the subject of evidence-based practice (Marchant, 1988; Valencia & Killon, 1989; Foster, 1997; Sackett *et al.*, 1997; Murray, 1998; Cordingley, 1999a and b; Davies, 1999; Peersman *et al.*, 1999; Cordingley, 2000, 2001; Davies *et al.*, 2000; Groundwater-Smith, 2000; Nutley & Webb, 2000; Hammersley, 2001; Teacher Training Agency, 2001; Nutley *et al.*, 2002), the value of action research (e.g. Elliott, 1994; Hancock, 1997; Meerah *et al.*, 2001) or teachers' involvement in research (e.g. Vulliamy & Webb, 1992; Kershner *et al.*, 1998; Halsall *et al.*, 1998). For example, Cordingley (2000) argues for teachers to be involved in research and also speculates about features of research that might help teachers to access and make greater use of research findings.

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While the subject of practitioners' use of research has attracted considerable debate, there is limited empirical evidence on this subject, although Datnow (2000) used 22 case studies to examine how and why schools in Canada adopted policy driven reforms, and the consequences of these processes for the management of change.

Barriers and facilitators to using research in education

The searches identified three empirical studies that focused on factors that hinder or facilitate the use of research by teachers (Castle, 1988; Cousins & Leithwood, 1993; Shkedi, 1998). Castle (1988) conducted a qualitative study with 26 elementary, junior, middle and senior high schools from one state in the United States, all of which were involved in a school reform initiative. The findings suggested that the volume, lack of applicability and ambiguity of research material were barriers to the use of research by teachers. Facilitators included: making information readily available; enabling teachers to devote time to reading research; use of outside consultants; providing evidence of the benefits of using research; ensuring that research had practical application; and promotion of a collegial atmosphere between researchers and teachers (see also Ratcliffe, 1988).

Findings from a case study of 47 teachers by Shkedi (1998) in Israel suggested that very few teachers turned to research literature to expand professional knowledge, solve problems or to meet the requirements of their job. Teachers in the study argued that they did not use research literature because they perceived it to be irrelevant, unhelpful and

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too theoretical. They claimed they lacked time, did not trust the findings, and could not understand the language or make sense of the statistics. Teachers also said that research literature was not available in their immediate surroundings but, when they did read literature they gave preference to practical educational literature that could be applied directly to their teaching. Most of those using research literature were doing so in the context of academic study, rather than to support their teaching. The author also argues that teachers perceived educational research to be quantitative in nature and found that teachers were largely unaware of the potential and value of qualitative research.

The best evidence for this review is provided by a study conducted by Cousins & Leithwood (1993). Survey questions focused on both the characteristics of the source of information and the context in which dissemination had taken place. The authors argue that dissemination to encourage the use of information for school improvement should not aim at merely prompting practitioners to replicate the work of others. They conclude that school improvement is an organisational change process, that schools are social systems and knowledge is socially constructed, therefore, social learning needs to take place. In order to promote social learning, the authors conclude that school improvement information should be shared and that practitioners should be involved in the design, delivery and follow-up activities associated with school improvement. The authors found that the relevance of the source information was a key factor in the use of research findings and that respondents (principals and district staff) were more likely to use research when the findings met their information needs. The authors concluded that the perceived sophistication (how finely tuned it was to match local needs), value, relevance,

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and timeliness of the information had a positive impact on its use. Social marketing was advocated by the authors as a way of encouraging school improvement on the basis that dissemination should meet the needs of the users. The authors also point out that there is a need to create a demand for information associated with school improvement.

The use of research by medical health practitioners

This section provides a brief overview of key papers from the medical field. There is a considerable body of research concerning the use of research by medical practitioners (e.g MacGuire, 1990; Winter, 1990; Bassett, 1992; Closs & Cheater, 1994; Rodgers, 1994; Moore, 1995; Verhoeven *et al.*, 1995; Lacey, 1996; Schmitt, 1999; Bryant, 2000; Rodgers, 2000). Studies examining evidence based practice (e.g. Barker and Gilbert, 2000; Falshaw *et al.*, 2000) concluded that whether research is used depends on how relevant it is to the NHS agenda and how accessible it is to those in the field.

A meta-analysis by Haug (1997) aimed to find out what kind of generalisations could be made about physicians' preferences for sources of professional information. This meta-analysis provides some of the 'best evidence' because it summarises the data from twelve studies and highlights a number of issues related to information-seeking behaviour. Haug (1997) found that physicians appeared to choose the sources of information that were most easily accessible and most applicable to the problem, and practitioners frequently rely on indirect sources of information about research findings, such as discussions with colleagues. Bryant (2000) conducted research in England using face-to-face interviews with GPs and concluded that they rarely sought information in order to

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keep up-to-date. They were anxious about 'information overload' and the availability of time needed to search for information.

Barriers and facilitators to using research in medicine and nursing

Systematic searches identified a small number of opinion papers on barriers and facilitators to research utilisation in medicine which concentrate on discussing the different levels of implementation of research findings in nursing (MacGuire, 1990; Bassett, 1992; Closs & Cheater, 1994; Moore, 1995; Lacey, 1996). Following influential empirical research by Funk *et al.* (1991) there have also been a number of empirical research studies which focused on barriers and incentives to the use of research findings in nursing (Champion & Leach, 1989; Bostrum & Suter, 1993; Lacey, 1994; Rodgers, 1994; Barta, 1995; Funk *et al.*, 1995; Hunt, 1996; Meah *et al.*, 1996; Camiah, 1997; Carroll *et al.*, 1997; Dunn *et al.*, 1998; Kajermo *et al.*, 1998, 2000; Le May *et al.*, 1998; Hundley *et al.*, 2000; Parahoo, 2000; Parahoo *et al.*, 2000; Retsas, 2000).

One of the most comprehensive studies is a cross-sectional survey by Funk *et al.* (1991, 1995) because the sample used for this survey was a large, stratified random sample. Funk *et al.* (1991) devised a 'barriers' scale for a research study with a target sample of 5,000, and an achieved sample of 1,989 registered nurses (including nurse managers and administrators) in the US. They found that the most frequently cited facilitator was '*enhanced administrative support and encouragement for research utilisation*', mentioned by a third of those surveyed. They argued for the creation of an organisational culture that values and uses research. Other suggestions were: advanced education;

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colleague support networks; and employing more nurses with research skills as role models. A study by Dunn *et al.* (1998) carried out in the UK with 316 nurses, used the Barriers Scale, and found that factors associated with the 'setting' were consistently perceived as strong barriers to research utilisation by nurses in both the UK and the US. The major barriers were identified as: insufficient time to implement new ideas; lack of co-operation from physicians; lack of time to read research; and inadequate facilities to support implementation.

Do medical practitioners make greater use of research findings than heads and teachers and if so, why?

Searches identified two studies that set out to compare the behaviour and attitudes of different professional groups, including professionals in education alongside those in medicine and other fields (e.g. Latham, 1993; Hannan *et al.*, 2000). The most pertinent findings for this review emerged from a small-scale cross sectional survey by Hannan *et al.* (2000) who found that compared with surgeons, GPs and teachers appeared to be less involved or interested in research. They suggest that the different level of involvement reflected its importance for career advancement among surgeons, whereas this is not the case for the other two professional groups. Although findings from a range of studies suggest that educationalists rarely use research findings compared with other professionals, searches identified little convincing or robust evidence to indicate how, and why practitioners in other fields use research findings more effectively.

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The role of change agents, opinion-leaders and diffusion networks in the dissemination and adoption of ideas for school improvement

There has been much discussion about approaches to the dissemination of research findings in education and other fields (Louis *et al.*, 1988; Richardson & Anders, 1990; Frantz, 1991; Leimu, 1992; Louis, 1992; Klein, 1993a and b; Huberman, 1993; Louis, 1996; Myers, 1998; Rumsey, 1998; Brooker & MacPherson, 1999; Schmitt, 1999; Campbell, 2000; Hopkins & Levin, 2000; Stanton & Morris, 2000; Louis & Jones, 2001).

A number of significant empirical research publications have also focused on the dissemination of research findings (Mills, 1992; Cousins & Leithwood, 1993; Michel & Sneed, 1995; Rogers, 1995; DETYA, 2000) and the links between researchers and practitioners (Reed & Franks, 1989; Huberman, 1990; Cousins & Simon, 1991; Crewe & Norris, 1991; Ordonez & Maclean, 1997; Elliott & Popay, 2000). In addition, the National Center for the Dissemination of Disability Research (NCDDR) (an organisation based in the USA) carried out a survey of literature which aimed to provide a knowledge base for improving access to and use of research results (NCDDR, 1996).

The diffusion of innovations model (Rogers, 1995), is widely acknowledged as having made a significant contribution to our understanding of the dissemination of innovations and ideas. Rogers presents a comprehensive analysis of the way new ideas are disseminated and adopted by users, based on research carried out in the US and drawing on examples from agriculture, health education, manufacturing and technology. Rogers

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argues that the adoption of new ideas is a process of social change and he identifies two key roles in that process. Change agents are people with professional training who are charged with bringing about the wider adoption of a new idea. Opinion leaders are people within a field who are influential in their social networks. Rogers, therefore, suggests that effective dissemination of ideas can be achieved by identifying opinion leaders, and concentrating change agents' contacts on them. Kanefsky (2001) recognises the relevance of Rogers' model within education and identifies a number of issues that need to be considered by research funders and change agents (with particular reference to the Learning and Skills Council).

For the purpose of this review, key findings emerging from the research literature are presented under the following headings derived from the diffusion of innovations model: change agents; opinion leaders; and diffusion networks.

Research into the use of change agents

A change agent is: '*An individual, such as a teacher, consultant or manager who influences clients' innovation-decisions in a direction deemed desirable by a change agency*' (Rogers, 1995, p. 336). Governments and local authorities, therefore, frequently act as change agencies and may seek to increase the impact of research. The role of change agents in this process has been the subject of considerable discussion and speculation (Dockrell, 1993; King & Wahlstrom, 1993; Roberts, 1993; Hill, 1998; Hutchinson & Whitehouse, 1999; Goldstein & Woodhouse, 2000; Wilkins, 2001).

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A study by Bolam (1994) provided the best empirical evidence on research impact and the role of change agents in the UK. He focused sharply on the findings from four research projects and on the subsequent implementation of recommendations from those projects. Bolam (1994) carried out research to reflect on whether key aspects of nationally funded continuing professional development (CPD) research projects have made a difference to policy and practice over a period of fifteen years.

As a result of this analysis, Bolam challenged some of the assumptions made about the links between dissemination of research findings and impact on policy and practice. He found that the most significant factors affecting impact on practice are resources and relevant regulations. Initiatives that were funded and made compulsory were likely to be implemented, whereas optional initiatives, especially those that were not adequately funded, were unlikely to be implemented. He concludes that there is no direct positive relationship between systematic dissemination of research findings to practitioners and impact on policy and practice. Bolam recommends that researchers seek ways of communicating their findings to policy makers and funding agencies.

Research on opinion leaders in education

Rogers suggests that opinion leaders have credibility to activate peer networks, which help to diffuse the innovation to others. They are also characterised by their tendency to adopt new ideas before their peers (Rogers, 1995).

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A study by Wikely (1998) attempted to find out how research on good practice can be disseminated to teachers in such a way as to inform school improvement. This research was the only empirical study identified by the review that specifically considered the use of teachers as 'opinion leaders' to disseminate information to their peers. The chosen dissemination strategy involved teacher/managers from six high performing departments sharing a written report, presentations and group discussions with their peers in a consortium of 15 schools.

The dissemination activities were intended to stimulate discussion about effectiveness, so that teachers in other departments could select, amend and apply those features that appeared relevant to them. However, instead of engaging with this process, the author found clear evidence of defensive behaviour among staff. The opinion leaders were perceived to have an unwarranted status as 'experts'. Teachers thought that the intention was to impose a particular style or model on their departments by offering practical training in how to be a 'good' department. The teachers challenged the validity of the research, and claimed that their unique situations invalidated the application of its findings. Wikely suggests that opinion leaders should be accepted as such by their peers and that the dissemination of research findings must be carefully facilitated in relation to the needs of practitioners. Clearly, asking teachers to use research findings is not a simple matter, even where potential opinion leaders have been identified.

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Research on diffusion networks in education

'Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system.' (Rogers, 1995, p. 5).

Probably one of the most important developments in defining a theory of dissemination is the increased focus on the social processes involved (Huberman, 1990; Louis & Jones, 2001). The use of 'links' or 'networks' in the dissemination of research findings to teachers has been discussed by a number of authors (Wilkins, 1988, 2000; Johnstone *et al.*, 1990; Slavin, 1990; Maclure, 1992; Hammersley & Scarth, 1993; Hallinan, 1996; Hargreaves, 1996a; Mitchell & Boyd, 1998; Davies, 1999; Harris, 2000, 2001; Kirst, 2000).

Huberman (1990) provides the best empirical evidence on diffusion networks in education because his research examined the interaction between researchers and practitioners. He evaluated 25 projects from a national vocational education research programme in Switzerland to establish how and whether such interaction impacted on the effective dissemination of research findings. Huberman (1990) found that good links established prior to and during a research study contributed to a more energetic approach to dissemination of the findings later on. He deduced that there is a relationship between the *type* and *amount* of contact made during a research study and the strength of the relationship between researchers and practitioners 18 months afterwards. Closer relationship help researchers to take into account the local context and predict the way in which the findings will be implemented. The author concludes that by strengthening the links between practitioners and researchers at every stage of the research process, the

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impact of research can be improved. However, in her review of research literature, Louis (1996) suggests that Huberman's study is limited because he made an assumption that there is a gap between research knowledge and practitioner knowledge that cannot be bridged without calculated interventions.

Dissemination and adoption of ideas for school improvement

In her narrative literature review Louis (1996) analysed emerging theories of knowledge utilisation and explored a link with research on educational improvement. The paper discusses why current models are inadequate as a way of explaining observed phenomena relating to dissemination and knowledge utilisation in education. She argues that policy makers in most countries believe that with proper 'sticks and carrots', schools can be encouraged or required to become better consumers of research results. She points out that popular documents funded by a variety of agencies (mostly in the USA) were intended to pave the way towards a better understanding of the connection between research knowledge and good school practice. However, she argues that knowledge is political and political contexts are critical to understanding knowledge use.

Louis suggests that all knowledge is local and knowledge created elsewhere must be compatible with existing belief structures so that it becomes legitimised and has utility within the local setting. She suggests that research knowledge generated in universities or research institutes is only one source of knowing and that its use must be negotiated through the dissemination process. She also observes that there has been a trend to involve practitioners in setting some research agendas. However, she argues that

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involving users will not necessarily make the research more usable, except among those who have been directly involved. Louis concludes that the main barriers to knowledge use in the public sector are not at the level of individual resistance but lie in an institutionalised culture that does not foster learning. She also points out that the utilisation and impact of research on practice can only be assessed over a long period of time.

Research impact on teaching and learning

Hillage *et al.* (1998) expressed concern that actions by decision-makers and practitioners are insufficiently informed by research, and dissemination is viewed as problematic. The following dissemination concerns are identified: use of publication in academic journals and inaccessibility of journals to non-academic audiences; lack of encouragement given to dissemination to practitioners; and absence of time and support to help practitioners access research.

The searches for this review identified one key, substantial and comprehensive study by DETYA (Department of Education, Training and Youth Affairs) (2000) carried out in Australia, which provides the best evidence of issues related to research impact. The authors identified a tension between educators and researchers, which they attributed to their different goals. They conclude that the practitioner wants new solutions to operational matters whilst the researcher seeks new knowledge. Two other issues were also raised by the report: the poor co-ordination and thin spread of research activities and the limited level of planning for training researchers in the dissemination of research.

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The report indicates that post-graduate students (mainly part-time) constitute the largest single group involved in educational research in Australia. The conclusion to the DETYA (2000) study states that the impact of research in schools and in policy formulation depends greatly on educators valuing research, and on their ability to critique and apply it. The authors suggest that for ideas to be accessible to educators and policy-makers, researchers have to market their knowledge actively to the education community as well as the research community. The author highlights the inadequacies of conceiving the relationship between educational research and practice as a linear relationship. 'Impact' suggests a clear, identifiable, measurable and direct relationship. The report contests such a view. Instead a multi-layered, unpredictable, interacting process of engagement between the researcher and the educator is presented. This engagement involves both researcher and educator in the creation of new knowledge and new solutions to challenges. The question of impact then becomes one of effective and responsive linkages at all levels.

Discussion and conclusions

Critical analysis of the findings from this systematic review resulted in the emergence of the following themes in both education and medicine: the need for cultural change; and management strategies. The following themes emerged from empirical research – only in the field of education: research design issues; training and professional development; collaboration, partnerships and links; and communication networks.

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Opinion papers that explored barriers to research utilisation tend to argue that the emphasis should shift from a personal level to an organisational level, and that it is simplistic to blame individual practitioners for their failure to access or use research. The conclusions from empirical research, in both education and in nursing, confirm that the main barriers to knowledge use in the public sector are not at the level of individual resistance but originated in an institutionalised culture that does not foster learning. Education practitioners appear to have very little incentive to access research findings and the language and presentation of research is perceived as alienating, particularly when the findings rely on statistical analysis. Education practitioners who are using research are likely to be doing so in the context of academic study. The key recommendation that emerges from empirical studies is that managers are viewed as key facilitators, and there is a need to create and develop an organisational culture that values and uses research.

The development of management strategies to facilitate research use was recommended by authors of opinion papers in both education and in medicine. The value, relevance, and timeliness of research information is thought to have a positive impact on use. Authors in the education field suggest that there is a lack of good, well-founded research evidence into key policy issues and, therefore, they argued for better professional knowledge about the management of schools, and effective strategies for teaching and learning. Some authors recommend that performance data should be managed effectively and used to help to improve schools. Further research is needed to examine specific management interventions, projects or programmes that facilitate research use.

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Findings from this systematic review suggest that the design of research studies can also impede research use in education. Empirical studies conclude that there is a tension between educators and researchers, which is attributed to differences in their professional goals. Teachers perceive educational research to be quantitative in nature and frequently challenge the validity of the research, arguing that their unique situations invalidate the application of its findings. Practitioners are identified as seeking new solutions to operational matters whilst the researchers are characterised as seeking new knowledge. Findings from this review suggest that many teachers judge a study's merits on the basis of whether the findings can be translated into procedures that work in classrooms. Findings from empirical research in education reveal that most teachers using research literature are likely to be doing so in the context of academic study, rather than to support their teaching. Post-graduate training appears to contribute towards raising practitioners' regard for educational research knowledge. The impact of research in schools and in policy formulation appears to depend greatly on educators valuing research, and on their ability to critique and apply it. Teachers may also needed more sustained opportunities to link their understanding of research to their knowledge of teaching and they appeared to choose the sources of information that were most easily accessible and most applicable to the problem.

Authors of opinion papers argue that teacher involvement in research is one of the keys to greater research utilisation in education. Research by Louis (1996), however, contradicts this assumption. She argues that involving users does not necessarily make

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the research more usable – except among those who have been directly involved. Authors of opinion papers also frequently argue that teachers and policy-makers learn from research, but research utilisation works best in settings of collaboration and mutual support. They conclude that effective programmes for change should be utilitarian, inspirational, provide immediate payoffs and meet local needs. Findings from empirical studies indicate that school improvement is an organisational change process, which implies that mere involvement in research is insufficient. They view schools as social systems and knowledge as socially and politically constructed, which places emphasis on organisational and professional cultures as the context for social learning. For such social learning to take place, empirical researchers conclude that research findings should be shared and practitioners should be involved in the design, focus, delivery, and follow-up activities.

Empirical research shows that there is no direct positive relationship between systematic dissemination of research findings and impact on policy and practice. Although evidence from some empirical studies concluded that effective dissemination of ideas is facilitated through the identification and use of opinion leaders, research also demonstrates that opinion leaders need to be accepted as such by their peers, and the dissemination of research findings must relate closely to the needs of practitioners. The findings of this review suggest that the most significant factors affecting impact on practice in education is legislation because schools will adopt policies, whether or not they are evidence based. However, if such initiatives are not adequately funded, they are unlikely to be adopted.

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The evidence from this review suggests that good links established prior to and during a research study contribute towards a more energetic approach to dissemination of the findings from educational research. For ideas to be accessible to educators and policy-makers, researchers have to market their knowledge to the education community as well as the research community. Marketing, in a research context, means anticipating and identifying the needs of the users (practitioners and policy-makers), meeting those needs through participative research activities, and effectively disseminating research findings through the word-of-mouth recommendations of successful user-opinion-leaders.

In conclusion, differences in the way that research knowledge is constructed in the social sciences has led to researchers being challenged about their findings, particularly in relation to the context, generalisability and validity of the research. For these reasons the development of communication networks, links between researchers and practitioners, and greater involvement of practitioners in the research process, have emerged as strategies for improving research impact.

Main text 6,540 words

References

BARKER, J. & GILBERT, D. (2000) Evidence produced in evidence based medicine needs to be relevant, *British Medical Journal*, 320, pp. 515 (19 February 2000)

BARTA, K. (1995) Information-seeking, research utilisation, and barriers to research utilisation of paediatric nurse educators, *Journal of Professional Nursing*, 11, 1, pp. 49–57.

Hemsley-Brown, J.V. and Sharp, C. (2004). 'The use of research to improve professional practice: a systematic review of the literature', *Oxford Review of Education*, 29, 4 pp. 449-470. (21p)

BASSETT, C. (1992) The integration of research in the clinical setting: obstacles and solutions. A review of the literature, *Nursing Practice*, 6, 1, pp. 4–8.

BASSEY, M. (1992) Creating education through research, *British Educational Research Journal*, 18, 1, pp. 3–16.

BEARD, J. & WILLIAMS, D. (1992) A survey of practitioners' attitudes toward research in technical communication, *Technical Communication*, 39, 4, pp. 571–581.

BIDDLE, B. (1996) Better ideas: expanded funding for educational research, *Educational Researcher*, 25, 9, pp. 12–14.

BIDDLE, B.J. & SAHA, L.J. (2000) Research knowledge use and school principals. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, 24 April.

BLUNKETT, D. (2000) Influence or irrelevance: can social science improve government? (Speech made by David Blunkett, Secretary of StaTe for Education and Employment to a meeting convened by the ESRC 2 February 2000), *Research Intelligence*, 71, p. 21–21.

BOLAM, R. (1994) The impact of research on policy and practice in continuing professional development, *British Journal of In-service Education*, 20, 1, pp. 35–46.

BOOTH, A. (2001). Cochrane or cock-eyed? How should we conduct systematic reviews of qualitative research? Paper presentation the the Qualitative Evidence-based Practice Conference "Taking a Critical Stance", University of Coventry, 14-16 May.

BOSTRUM, J. & SUTER, W.N. (1993) Research utilisation: making the link to practice, *Journal of Nursing Staff Development*, 9, 1, pp. 28–34.

BRACEY, G. (1989) Why so much education research is irrelevant, imitative and ignored, *American School Board Journal*, 176, 7, pp. 20–22.

BROOKER, R. & MacPHERSON, I. (1999) Communicating the processes and outcomes of practitioner research, *Education and Action Research*, 7, 2, pp. 207–220.

BRYANT, A. (2000) Information wanted? Knowledge, curiosity, uncertainty and evidence; a qualitative study of the perceived information needs of general practitioners. Paper presented at the Qualitative Evidence-Based Practice Conference, Coventry University, 15-17 May [online]. Available: <http://www.leeds.ac.uk/educol/documents/00001417.htm> [13 May, 2002].

BUDGE, D. (1996) A cosy world of trivial pursuits? *Times Educational Supplement*, 28 June, pp. 14–15.

Hemsley-Brown, J.V. and Sharp, C. (2004). 'The use of research to improve professional practice: a systematic review of the literature', *Oxford Review of Education*, 29, 4 pp. 449-470. (21p)

CAMIAH, S. (1997) Utilisation of nursing research in practice and application strategies to raise research awareness amongst nurse practitioners: a model for success, *Journal of Advanced Nursing*, 26, 6, pp. 1193–1202.

CAMPBELL, A. (2000) Fictionalising research data as a way of increasing teachers' access to school-focused research, *Research in Education*, 63, pp. 81–88.

CARROLL, D.L., GREENWOOD, R., LYNCH, K.E., READY, C.H. & FITZMAURICE, J.B. (1997) Barriers and facilitators to the utilisation of nursing research, *Clinical Nurse Specialist*, 11, 5, pp. 207–212.

CASTLE, S.D. (1988) Empowerment through knowledge, in: S.D. CASTLE (Ed) *Teacher empowerment through knowledge linking research and practice for school reform*. Papers presented at the Annual Meeting of the American Educational Research Association, New Orleans, 5-9 April.

CHAMPION, V.L. & LEACH, A. (1989) Variables related to research utilisation in nursing: an empirical study, *Journal of Advanced Nursing*, 14, pp. 705–710.

CLOSS, S. and CHEATER, F. (1994) Utilisation of nursing research: culture, interest and support, *Journal of Advanced Nursing*, 19, 4, pp. 762–773.

COE, R. & FITZGIBBON, C. (1998) School effectiveness research: criticisms and recommendations, *Oxford Review of Education*, 24, 4, pp. 421–438.

CORDINGLEY, P. (1999a) Constructing and critiquing reflective practice, *Educational Action Research*, 7, 2, pp. 183–190.

CORDINGLEY, P. (1999b) Teachers and research, *Forum*, 41, 3, pp. 124–125.

CORDINGLEY, P. (2000) Compelling research communications - the perspective of the national teacher research panel. Paper presented at the British Educational Research Association Annual Conference, Cardiff University, 7-10 September.

CORDINGLEY, P. (2001) Closing the gap: increasing research impact through teacher involvement in research design and review. Paper presented at the Annual Conference of the British Educational Research Association, 13-15 September.

COUNSELL, C., EVANS, M., McINTYRE, D. & RAFFAN, J. (2000) The usefulness of educational research for trainee teachers' learning, *Oxford Review of Education*, 26, 3-4, pp. 467–482.

COUSINS, J. & LEITHWOOD, K. (1993) Enhancing knowledge utilisation as a strategy for school improvement, *Knowledge Creation Diffusion Utilisation*, 14, 3, pp. 305–333.

Hemsley-Brown, J.V. and Sharp, C. (2004). 'The use of research to improve professional practice: a systematic review of the literature', *Oxford Review of Education*, 29, 4 pp. 449-470. (21p)

COUSINS, J.B. & SIMON, M. (1991) The nature and impact of policy-induced partnerships between research and practice communities, *Educational Evaluation and Policy Analysis*, 18, 3, pp. 199–218.

CREWE, I. & NORRIS, P. (1991) British and American journal evaluation: divergence or convergence? *Political Science and Politics*, 24, 3, pp. 524–31.

DATNOW, A. (2000) Power and politics in the adoption of school reform models, *Educational Evaluation and Policy Analysis*, 22, 4, pp. 357–374.

DAVIES, P. (1999) What is evidence-based education? *British Journal of Educational Studies*, 47, 2, pp. 108–121.

DAVIES, P. (2000). The relevance of systematic reviews to educational policy and practice, *Oxford Review of Education*, 26, 3-4, pp. 365–378.

DAVIES, H.T.O., NUTLEY, S.M. & SMITH, P.C. (Eds) (2000) *What Works? Evidence-based Policy and Practice in Public Services* (Bristol, Policy Press).

DEMIE, F. (2001) Using value added data for school self-evaluation: case study of practice in an inner city school. Paper presented at the Annual Conference of the British Educational Research Association, University of Leeds, 13-15 September.

DEPARTMENT FOR EDUCATION AND EMPLOYMENT (2001) *Dissemination of Good Practice: Case Studies* (The LEA Contribution to School Improvement) [online]. Available: <http://www.standards.dfes.gov.uk/lea/framework.html> [12 July, 2001].

DEPARTMENT OF EDUCATION, TRAINING AND YOUTH AFFAIRS (2000) *The Impact of Educational Research: Research Evaluation Programme* [online]. Available: http://www.detya.gov.au/highered/respubs/impact/splitpdf_default.htm [3 January, 2002].

DESFORGES, C. (2000a) Familiar challenges and new approaches: necessary advances in theory and methods in research on teaching and learning. The Desmond Nuttall/Carfax Memorial Lecture, British Educational Research Association Annual Conference, Cardiff University, 7-10 September.

DESFORGES, C. (2000b) *Putting Educational Research to Use Through Knowledge Transformation: the Agency Comments. Keynote Lecture to the Further Education Research Network Conference, Coventry, 12 December, 2000* (London, Learning and Skills Development Agency).

DOCKRELL, W. (1993) Policy and practice: a case study of the impact of a research programme on both, *Evaluation and Research in Education*, 7, 1, pp. 29–37.

Hemsley-Brown, J.V. and Sharp, C. (2004). 'The use of research to improve professional practice: a systematic review of the literature', *Oxford Review of Education*, 29, 4 pp. 449-470. (21p)

DUNN, S., CRICHTON, N., ROE, B., SEERS, K. & WILLIAMS, K. (1998) Using research for practice: a UK experience of a BARRIERS scale, *Journal of Advanced Nursing*, 26, 6, pp. 1203–1210.

EDWARDS, T. (2000) "All the evidence shows..": reasonable expectations of educational research, *Oxford Review of Education*, 26, 3-4, pp. 299–311.

ELLIOTT, H. & POPAY, J. (2000) How are policy makers using evidence? Models of research utilisation and local NHS policy making, *Journal of Epidemiology and Community Health*, 54, 6, pp. 461–468.

ELLIOTT, J. (1994) Research on teachers' knowledge and action research, *Educational Action Research*, 2, 1, pp. 133–137.

EVANS, J. and BENEFIELD, P. (2001) Systematic reviews of educational research: does the medical model fit? *British Educational Research Journal*, 27, 5, pp. 527–41.

FALSHAW, M, CARTER, Y H, GRAY, R W (2000) Evidence should be accessible as well as relevant. *British Medical Journal*, 321, pp. 567-567 (2nd September 2000)

FLEMING, D.S. (1988) The literature on teacher utilisation of research: implications for the school reform movement, in: S.D. CASTLE (Ed) *Teacher empowerment through knowledge linking research and practice for school reform*. Papers presented at the Annual Meeting of the American Educational Research Association, New Orleans, 5-9 April.

FOSTER, P. (1997) A need to move in mysterious ways, *Times Educational Supplement*, 4247, 21 November, p. 14.

FOSTER, P. & HAMMERSLEY, M. (1998) A review of reviews: structure and function in reviews of educational research, *British Educational Research Journal*, 24, 5, pp. 609–633.

FRANTZ, N. (1991) Practice-oriented research or research oriented practice', *Journal of Vocational Education Research*, 16, 4, pp. 35–43.

FUNK, S., CHAMPAGNE, M. & TORNQUIST, E. (1995) Administrators' views on barriers to research utilisation, *Applied Nursing Research*, 8, 1, pp. 44–49.

FUNK, S.G., CHAMPAGNE, M.T., WIESE, R.A. & TORNQUIST, E.M. (1991) Barriers: the barriers to research utilisation scale, *Applied Nursing Research*, 4, 1, pp. 39–45.

GIPPS, C. (1997) The funding and management of research in education, *Research Intelligence*, 62, pp. 2–6.

Hemsley-Brown, J.V. and Sharp, C. (2004). 'The use of research to improve professional practice: a systematic review of the literature', *Oxford Review of Education*, 29, 4 pp. 449-470. (21p)

GOLDSTEIN, H. & WOODHOUSE, G. (2000) School effectiveness research and educational policy, *Oxford Review of Education*, 26, 3-4, pp. 353–363.

GROUNDWATER-SMITH, S. (2000) Evidenced based practice - towards whole school improvement. Paper presented at the Annual Conference of the Australian Association for Research in Education, Sydney, 4-7 December.

HAGGER, H. & McINTYRE, D. (2000) What can research tell us about teacher education? *Oxford Review of Education*, 26, 3-4, pp. 483–494.

HALLINAN, M. (1996) Bridging the gap between research and practice (Extra Issue), *Sociology of Education*, pp. 131–134.

HALSALL, R., CARTER, K., CURLEY, M. & PERRY, K. (1998) School improvement: the case for supported teacher research, *Research Papers in Education*, 13, 2, pp. 161–182.

HAMMERSLEY, M. (1997) Educational research and teaching: a response to David Hargreaves' TTA lecture, *British Educational Research Journal*, 23, 2, pp. 141–161.

HAMMERSLEY, M. (2001) Some questions about evidence-based practice in education. Paper presented at the symposium on "Evidence-based Practice in Education" at the Annual Conference of the British Educational Research Association, University of Leeds, 13-15 September.

HAMMERSLEY, M. & SCARTH, J. (1993) Beware of wise men bearing gifts: a case study in the misuse of educational research, *British Educational Research Journal*, 19, 5, pp. 489–495.

HANCOCK, R. (1997) Why are class teachers reluctant to become researchers? *British Journal of In-service Education*, 23, 1, 85–99.

HANNAN, A., ENRIGHT, H. & BALLARD, P. (2000) Using research: the results of a pilot study comparing teachers, general practitioners and surgeons [online]. Available: www.leeds.ac.uk/educol/documents/000000851 [07 July, 2001].

HARGREAVES, A. (1996a) Transforming knowledge: blurring the boundaries between research, policy and practice, *Educational Evaluation and Policy Analysis*, 18, 2, pp. 105–122.

HARGREAVES, D. (1996b) *Teaching as a Research-Based Profession: possibilities and prospects. Teacher Training Agency Annual Lecture* (London, Teacher Training Agency).

HARGREAVES, D. (1999) The knowledge creating school, *British Journal of Educational Studies*, 47, 2, pp. 122–144.

Hemsley-Brown, J.V. and Sharp, C. (2004). 'The use of research to improve professional practice: a systematic review of the literature', *Oxford Review of Education*, 29, 4 pp. 449-470. (21p)

HARRIS, A. (2000) What works in school improvement? Lessons from the field and future directions, *Educational Research*, 42, 1, pp. 1–11.

HARRIS, A. (2001) Building the capacity for school improvement, *School Leadership & Management*, 21, 3, pp. 261–270.

HAUG, J. (1997) Physicians' preferences for information sources: a meta-analytic study, *Bulletin of the Medical Library Association*, 85, 3, pp. 223–232.

HEGARTY, S. (1997) A study less ordinary, *Times Education Supplement*, 4248, 23 December, p. 23.

HENDY, J. (1999) *Survey of LEA Research, Statistics and Information Activities: case studies* (EMIE Report No.52) (Slough, NFER, EMIE).

HILL, P. (1998) Shaking the foundations: research driven school reform, *School Effectiveness and School Improvement*, 9, 4, pp. 419–436.

HILLAGE, J., PEARSON, R., ANDERSON, A. & TAMKIN, P. (1998) *Excellence in Research in Schools* (DfEE Research Report 74) (London, DfEE).

HOPKINS, D. & LEVIN, B. (2000) Government policy and school development, *School Leadership & Management*, 20, 1, pp. 15–30.

HUBERMAN, M. (1990) Linkage between researchers and practitioners: a qualitative study, *American Educational Research Journal*, 27, 2, pp. 363–391.

HUBERMAN, M. (1993) Linking the practitioner and researcher communities for school improvement, *School Effectiveness and School Improvement*, 4, 1, pp. 1–16.

HUNDLEY, V., MILNE, J., LEIGHTON-BECK, L., GRAHM, W. & FITZMAURICE, A. (2000) Raising research awareness among midwives and nurses: does it work? *Journal of Advanced Nursing*, 31, 1, pp. 78–88.

HUNT, M. (1996) Barriers to research utilisation, *Journal of Advanced Nursing*, 23, 3, pp. 423–425.

HUTCHINSON, B. & WHITEHOUSE, P. (1999) The impact of action research and education reform in Northern Ireland: education and democracy, *British Educational Research Journal*, 25, 2, pp. 141–155.

JOHNSTONE, J., MARDER, J. & SHEFFIELD, P. (1990) Educational research and educational practice: bridging the gap, *Journal of Education for Teaching*, 16, 1, pp. 83–90.

Hemsley-Brown, J.V. and Sharp, C. (2004). 'The use of research to improve professional practice: a systematic review of the literature', *Oxford Review of Education*, 29, 4 pp. 449-470. (21p)

KAJERMO, K., NORDSTROM, G. & KRUSEBRANT, A. (1998) Barriers to and facilitators of research utilisation, as perceived by a group of registered nurses in Sweden, *Journal of Advanced Nursing*, 27, 4, pp. 798–807.

KAJERMO, K., NORDSTROM, G. & KRUSEBRANT A. (2000) Perceptions of research utilisation: comparisons between health care professionals, nursing students and a reference group of nurse clinicians, *Journal of Advanced Nursing*, 31, 1, pp. 99–109.

KANEFSKY, J. (2001) Maximising impact, *Learning and Skills Research*, 5, 1, pp. 30–33.

KENNEDY, M. (1997) How teachers connect research and practice, *Mid-Western Educational Researcher*, 10, 1, pp. 25–29.

KERSHNER, R., FLUTTER, J. & RUDDUCK, J. (1998) Teacher research as a basis for school improvement: but is it useful beyond the school in which it was carried out? *Improving Schools*, 1, 2, pp. 59–62.

KING, J. & WAHLSTROM K. (1993) Bringing research to life in schools: the Centre for Applied Research and Educational Improvement (CAREI), *Evaluation and Research in Education*, 7, 1, pp. 23–27.

KIRST, M. (2000) Bridging education research and education policymaking, *Oxford Review of Education*, 26, 3-4, pp. 379–391.

KLEIN, S.S. (1993a) Are there better ways to identify and share the best within and among federal education-programs, *Evaluation Program Planning*, 16, 3, pp. 227–239.

KLEIN, S.S. (1993b) Sharing the best: Finding better ways for the federal government to use evaluation to guide the dissemination of promising and exemplary education solutions, *Evaluation Program Planning*, 16, 3, pp. 213–217.

LACEY, E. (1994) Research utilisation in nursing practice: a pilot study, *Journal of Advanced Nursing*, 19, 5, pp. 987–995.

LACEY, E. (1996) Facilitating research-based practice by educational intervention, *Nurse Education Today*, 16, 4, pp. 296–301.

LANDRY, R., LAMARI, M. & AMARA, N. (2000). Extent and Determinants of Utilization of University Research in Public Administration. Paper presented at the Joint Conference of the Canadian Political Science Association and Societe Quebecoise de Science Politique, Centre des Congres, Quebec, QC, Canada 29 July -1 August.

LATHAM, G. (1993) Do educators use the literature of the profession? *NASSP Bulletin*, 77, 550, pp. 63–70.

Hemsley-Brown, J.V. and Sharp, C. (2004). 'The use of research to improve professional practice: a systematic review of the literature', *Oxford Review of Education*, 29, 4 pp. 449-470. (21p)

LEE, B. and SCANLON, M. (1999). *Survey of LEA Research, Statistics and Information Activities* (Slough, NFER, EMIE).

LEIMU, K. (1992) Interests and modes in research utilisation: the Finnish IEA experience, *Prospects*, 22, 4, pp. 427–433.

LE MAY, A., MULHALL, A. & ALEXANDER, C. (1998) Bridging the research - practice gap: exploring the research cultures of practitioners and managers, *Journal of Advanced Nursing*, 28, 2, pp. 428–437.

LOUIS, K.S. (1992) Comparative perspectives on dissemination and knowledge use policies: supporting school improvement, *Knowledge, Creation, Diffusion, Utilisation*, 13, 3, pp. 287–304.

LOUIS, K.S. (1996) Reconnecting knowledge utilisation and school improvement: two steps forward, one step back, in: A. HARGREAVES, M. FULLAN & D. HOPKINS (Eds) *International Handbook on School Improvement* (London, Cassell).

LOUIS, K.S., DENTLER, R. & KELL, D. (1988) Knowledge use and school improvement, *Curriculum Enquiry*, 18, 1, pp. 33–62.

LOUIS, K.S. & JONES, L. (2001) *Dissemination with Impact: what research suggests for practice in career and technical education* (University of Minnesota, Unpublished).

MacCOLL, G. & WHITE, K. (1996) Improving the utility of educational research for policymakers. Paper presented at the Annual Meeting of the American Educational Research Association, New York, 8-12 April.

MacGUIRE, J. (1990) Putting nursing research findings into practice: research utilisation as an aspect of the management of change, *Journal of Advanced Nursing*, 15, 5, pp. 614–620.

MACLURE, M. (1992) Utilisation of research, *International Journal of Epidemiology*, 21, 4, pp. 824–825.

MALOUF, D. & SCHILLER, E. (1995) Practice and research in special education, *Exceptional Children*, 61, 5, pp. 414–424.

MARCHANT, G. (1988) Attitudes toward research-based effective teaching behaviours from teachers, principals and college faculties and students. Paper presented at the Annual Meeting of the Mid-Western Educational Research Association, 13 October.

McINTYRE, D. (1997) The profession of educational research, *British Educational Research Journal*, 23, 2, pp. 127–140.

Hemsley-Brown, J.V. and Sharp, C. (2004). 'The use of research to improve professional practice: a systematic review of the literature', *Oxford Review of Education*, 29, 4 pp. 449-470. (21p)

MEAH, S., LUKER K. & CULLUM, N. (1996) An exploration of midwives' attitudes to research and perceived barriers to research utilisation, *Midwifery*, 12, 2, pp. 73–84.

MEERAH, T.S.M., JOHAR, A.R. & AHMAD, J. (2001). What motivates teachers to conduct research? Paper presented at the Higher Education Close Up Conference 2, University of Lancaster, 16-18 July.

MICHEL, Y. & SNEED, N. (1995) Dissemination and use of research findings in nursing practice, *Journal of Professional Nursing*, 11, 5, pp. 306–311.

MILLS, S. (1992) *Impact of Department of Education Dissemination Practices on California Schools* (California: California State Department of Education).

MITCHELL, D.E. & BOYD, W.L. (1998) Knowledge utilisation in educational policy and politics: conceptualising and mapping the domain, *Educational Administration Quarterly*, 34, 1, pp. 126–140.

MOORE, P.A. (1995) The utilisation of research in practice, *Professional Nurse*, 10, 8, pp. 536–537.

MORTIMORE, P. (2000) Does educational research matter? *British Educational Research Journal*, 26, 1, pp. 5–24.

MURRAY, J. (1998) Integration or dichotomy of teaching and research? A case study of primary initial teacher educators, *Teachers and Teaching: Theory and Practice*, 4, 1, pp. 143–160.

MYERS, K. (1998) The LEA's role in managing school improvement projects, *Improving Schools*, 1, 2, pp. 63–67.

NATIONAL CENTER FOR THE DISSEMINATION OF DISABILITY RESEARCH (1996) *Review of the Literature on Dissemination and Knowledge Utilisation* [online]. Available: <http://www.ncddr.org/du/products.review/review2/html> [13 May, 2002].

NUTLEY, S., WALTER, I. & DAVIES, H. (2002). *From Knowing to Doing: a Framework for Understanding the Evidence-into-Practice Agenda* (Discussion Paper 1) (St Andrews, University of St Andrews, Research Unit for Research Utilisation).

NUTLEY, S.M. & WEBB, J. (2000) Evidence and the policy process, in: H.T.O. DAVIES, S.M. NUTLEY & P.C. SMITH (Eds) *What Works? Evidence-based Policy and Practice in Public Services* (Bristol, Policy Press).

ORDONEZ, V. & MACLEAN, R. (1997) Asia: the impact of educational research on decision-making, *Prospects*, 27, 4, pp. 645–654.

Hemsley-Brown, J.V. and Sharp, C. (2004). 'The use of research to improve professional practice: a systematic review of the literature', *Oxford Review of Education*, 29, 4 pp. 449-470. (21p)

PARAHOO, K. (2000) Barriers to, and facilitators of, research utilisation among nurses in Northern Ireland, *Journal of Advanced Nursing*, 31, 1, pp. 89–98.

PARAHOO, K., BARR, O. & McCAUGHAN, E. (2000) Research utilisation and attitudes towards research among learning disability nurses in Northern Ireland, *Journal of Advanced Nursing*, 31, 3, pp. 607–613.

PAVLOU, D. & BENNETT, N. (2001) *Promoting Organisational Learning Through a Collaborative Action Research Project* (Milton Keynes, Open University Press).

PEERSMAN, G.V., OAKLEY, A.R. & OLIVER, S.R. (1999) Evidence-based health promotion? Some methodological challenges, *International Journal of Health Promotion and Education*, 37, 2, pp. 59–64.

RATCLIFFE, G. (1988) Obstacles to teacher use of the knowledge base for school reform, in S.D. CASTLE (Ed) *Teacher empowerment through knowledge linking research and practice for school reform*. Papers presented at the Annual Meeting of the American Educational Research Association, April 5–9.

RAUCH, S. (1991) *Translating Research into Action* (New York, EDRS).

REED, D. & FRANKS, M. (1989) Impact of MSERA research on policy decisions. Paper presented at the Annual Meeting of the Mid-South Educational Research Association, Little Rock, Arkansas, 7-10 November.

RETSAS, A. (2000) Barriers to using research evidence in nursing practice, *Journal of Advanced Nursing*, 31, 3, pp. 599–606.

RICHARDSON, V. & ANDERS, P. (1990) *Reading Instruction Study: Final Report* (Arizona: EDRS Microfiche).

ROBERTS, J. (1993) Evaluating the impact of teacher research, *System*, 21, 1, pp. 1–19.

RODGERS, S. (1994) An exploratory study of research utilisation by nurses in general medical and surgical wards, *Journal of Advanced Nursing*, 20, 5, pp. 904–911.

RODGERS, S. (2000) The extent of nursing research utilisation in general medical and surgical wards, *Journal of Advanced Nursing*, 32, 1, pp. 182–193.

ROGERS, E. (1995) *Diffusion of Innovations* (New York, The Free Press).

RUDD, P. & DAVIES, D. (2002) *A Revolution in the Use of Data? The LEA Role in Data Collection, Analysis and Use and Its Impact on Pupil Performance* (LGA Research Report 29) (Slough, NFER).

Hemsley-Brown, J.V. and Sharp, C. (2004). 'The use of research to improve professional practice: a systematic review of the literature', *Oxford Review of Education*, 29, 4 pp. 449-470. (21p)

RUDDOCK, J. & McINTYRE, D. (Eds) (1998) *Challenges for Educational Research* (London, Paul Chapman)

RUMSEY, D. (1998) Research in education. Does it count? Making sure educational research counts: strategies for increasing relevance, value and take-up of educational research outcomes. Paper presented at the Australian Association for Research in Education Conference, Adelaide, November.

SACKETT, D.L., RICHARDSON, W.S., ROSENBERG, W.M. & HAYNES, R.B. (1997) *Evidence-based Medicine: How to practice and teach EBM* (Edinburgh, Churchill Livingstone).

SAHA, L., BIDDLE, B. & ANDERSON, D. (1995) Attitudes towards education research knowledge and policymaking among American and Australian school principals, *International Journal of Educational Research*, 23, 2, pp. 113–126.

SAUNDERS, L. & RUDD, P. (1999) Schools' use of "value-added" data: a science in the service of an art? Paper presented at the Annual Conference of the British Educational Research, University of Sussex, Brighton, 2-5 September.

SCHEERENS, J. & CREEMERS, B. (1996) School effectiveness in the Netherlands: the modest influence of a research programme, *School Effectiveness & School Improvement*, 7, 2, pp. 181–195.

SCHMITT, M. (1999) Closing the gap between research and practice: strategies to enhance research utilisation, *Research in Nursing Health*, 22, 6, pp. 433–434.

SHAVELSON, R. (1988) Contributions of educational research to policy and practice: constructing, challenging, changing cognition, *Educational Researcher*, 17, 7, pp. 4–11.

SHAVELSON, R. & BERLINER, C. (1988) Erosion of the educational research infrastructure, *Educational Researcher*, 17, 1, pp. 9–12.

SHELDON, T. & CHALMERS, I. (1994) The UK Cochrane Centre and the NHS Centre for Reviews and Dissemination: respective roles within the Information Systems Strategy of the NHS R & D Programme, coordination and principles underlying collaboration, *Health Economics*, 3, pp. 201–203.

SHKEDI, A. (1998) Teachers' attitudes towards research: a challenge for qualitative researchers, *International Journal of Qualitative Studies in Education*, 11, 4, pp. 559–577.

SLAVIN, R. (1990) On making a difference, *Educational Researcher*, 19, 3, pp. 30–34.

SLAVIN, R.E. (1986) Best-evidence synthesis: an alternative to meta-analytic and traditional reviews, *Educational Researcher*, 15, 9, pp.5–11.

Hemsley-Brown, J.V. and Sharp, C. (2004). 'The use of research to improve professional practice: a systematic review of the literature', *Oxford Review of Education*, 29, 4 pp. 449-470. (21p)

STALLER, K. & KIRK, S. (1998) Knowledge utilisation in social work and legal practice, *Journal of Sociology and Social Welfare*, 25, p. 3.

STANTON, G. & MORRIS, A. (2000) Making R&D more than research plus development, *Higher Education Quarterly*, 54, 2, pp. 127-146.

TEACHER TRAINING AGENCY (2001) *Improving Standards: Research and Evidence-Based Practice* [online] Available: http://www.canteach.gov.uk/research/evidence/tta00_03.pdf [29 August, 2001].

TIERNEY, W.G. (2000) On translation: from research findings on public utility, *Theory into Practice*, 39, 3, 185-190.

TOBIN, K. (1988) Improving science teaching practices, *International Journal of Science Education*, 10, 5, pp. 475-484.

TOOLEY, J. & DARBY, D. (1998) *Educational Research: a critique. A survey of published educational research* (London: OFSTED).

TURNBULL, B. (1992) Research knowledge and school improvement: can this marriage be saved? Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, 20-24 April.

VALENCIA, S. & KILLON, J. (1989) *Implementing Research-based Reading and Writing Programs Overcoming Obstacles to Teacher Change: three case studies* (Technical Report No 462) (Illinois, Office of Educational Research and Improvement).

VERHOEVEN, A., BOERMA, E. & MEYBOOM-DE-JONG, B. (1995) Use of information sources by family physicians: a literature survey, *Bulletin of the Medical Library Association*, 83, 1, pp. 85-90.

VULLIAMY, G. & WEBB, R. (1992) The influence of teacher research: process or product? *Educational Review*, 44, 1, pp. 41-58.

WIKELY, F. (1998) Dissemination of research as a tool for school improvement, *School Leadership & Management*, 18, 1, pp. 59-73.

WILKINS, R. (1988) Research and policy in teachers' organisations, *Journal of Education Policy*, 3, 2, pp. 89-103.

WILKINS, R. (2000) Practitioner research in LEA-directed INSET, *Journal of In-service Education*, 26, 1, pp. 99-113.

Hemsley-Brown, J.V. and Sharp, C. (2004). 'The use of research to improve professional practice: a systematic review of the literature', *Oxford Review of Education*, 29, 4 pp. 449-470. (21p)

WILKINS, R. (2001) A research agenda for school effectiveness and improvement. Paper presented at the 14th International Congress for School Effectiveness and Improvement, Toronto, 5-9 January.

WINTER, J.C. (1990) Brief: relationships between sources of knowledge and use of research findings, *Journal of Continuing Education in Nursing*, 21, 3, pp. 138–140.

ZEULI, J. (1994) How do teachers understand research when they read it? *Teaching and Teacher Education*, 10, 1, pp. 39–55.

ZEULI, J. & TIEZZI, L. (1993) *Creating Contexts to Change Teachers' Beliefs About the Influence of Research* (Research Report 93-1) (Michigan, National Center for Research on Teacher Learning).